

*May I hope*



***Indiana Vocational Technical College***

All policies, charges, fees, course offerings and the curriculum may be changed from time to time without notice as required by varying circumstances.

# **INDIANA VOCATIONAL TECHNICAL COLLEGE**



## **GENERAL CATALOG** 1972 – 73

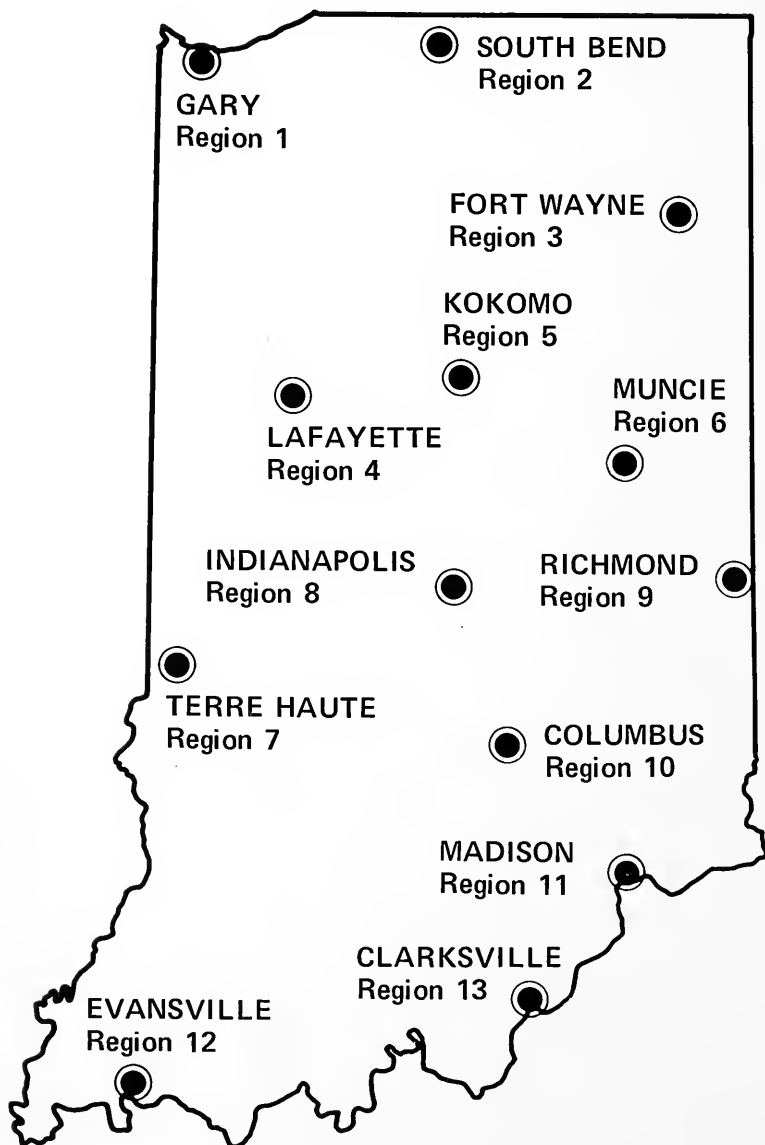
STATE COLLEGE OFFICE

5221 Ivy Tech Drive

Indianapolis, Indiana 46268

THE STATE COLLEGE SYSTEM OF REGIONAL TECHNICAL INSTITUTES

INDIANA VOCATIONAL TECHNICAL COLLEGE  
REGIONAL INSTITUTES



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# **THE CALENDAR**

## **1972 - 73**

### **SUMMER QUARTER 1972**

May 30-June 1 ..... Official Summer Registration  
June 5, Monday ..... Summer Quarter Begins  
June 9, Friday ..... Late Summer Registration Ends  
July 4, Tuesday ..... Independence Day (No Classes in Session)  
August 14-18 ..... Pre-Registration for Fall Quarter  
August 18, Friday ..... Summer Quarter Ends

### **FALL QUARTER 1972**

September 5,6,7 ..... Official Fall Registration  
September 8, Friday ..... Fall Quarter Begins  
(New Student Orientation)  
September 11, Monday ..... Classes Begin  
September 15, Friday ..... Late Fall Registration Ends  
November 20-22 ..... Pre-Registration for Winter Quarter  
November 23-24 ..... Thanksgiving Vacation  
November 27, Monday ..... Fall Quarter Ends

### **WINTER QUARTER 1972-73**

November 28-30 ..... Official Winter Registration  
December 1, Friday ..... Winter Quarter Begins  
December 7, Thursday ..... Late Winter Registration Ends

December 15, Friday ..... School Closes End of Day  
for Christmas Vacation  
January 2, Tuesday ..... School Opens  
February 26-28, March 1,2 ..... Pre-Registration for Spring Quarter  
March 5 Monday ..... Winter Quarter Ends

### **SPRING QUARTER 1973**

March 5-7 ..... Official Spring Registration  
March 12, Monday ..... Spring Quarter Begins  
March 16, Friday ..... Late Spring Registration Ends  
March 31, Friday ..... School Closes at Noon for Good Friday  
May 21-25 ..... Pre-Registration for Summer Quarter  
May 25, Friday ..... Spring Quarter Ends  
May 28, Monday ..... Memorial Day (School Closed)

### **SUMMER QUARTER 1973**

June 5,6,7 ..... Official Summer Registration  
June 8, Friday ..... Summer Quarter Begins  
June 13, Wednesday ..... Late Summer Registration Ends  
August 20-24 ..... Pre-Registration for Fall Quarter  
August 24, Friday ..... Summer Quarter Ends

# INDIANA VOCATIONAL TECHNICAL COLLEGE

## REGIONAL TECHNICAL INSTITUTES

### REGION 1

**Northwest Technical Institute**  
1440 East 35th Avenue  
Gary, Indiana 46409  
Telephone 219 / 887-9646

### REGION 2

**St. Joseph Valley  
Technical Institute**  
1534 West Sample Street  
South Bend, Indiana 46619  
Telephone 219 / 289-7001

### REGION 3

**Northeast Technical Institute**  
1711 Maumee Avenue  
Fort Wayne, Indiana 46803  
Telephone 219 / 742-1162

### REGION 4

**Tippewa Technical Institute**  
616 Wabash Avenue  
Lafayette, Indiana 47905  
Telephone 317 / 742-0061

### REGION 5

**North Central Technical Institute**  
3717 South Reed Road  
Kokomo, Indiana 46901  
Telephone 317 / 453-5880

### REGION 6

**East Central Technical Institute**  
1300 South Liberty Street  
Muncie, Indiana 47302  
Telephone 317 / 289-2291

### REGION 7

**Wabash Valley Technical Institute**  
R.R. 22, Box 450  
Terre Haute, Indiana 47802  
Telephone 812 / 299-1121

### REGION 8

**Mallory Technical Institute**  
1315 East Washington Street  
Indianapolis, Indiana 46202  
Telephone 317 / 632-8421

### REGION 9

**Whitewater Technical Institute**  
710 Northwest 5th Street  
Richmond, Indiana 47374  
Telephone 317 / 966-5944

### REGION 10

**White River Valley Technical  
Institute**  
646 Franklin Street  
Columbus, Indiana 47201  
Telephone 812 / 373-9925

### REGION 11

**Ohio Valley Technical Institute**  
First and Broadway  
Madison, Indiana 47250  
Telephone 812 / 265-2580

### REGION 12

**Lincolnland Technical Institute**  
402 Court Street  
Evansville, Indiana 47708  
Telephone 812 / 425-4368

### REGION 13

**George Rogers Clark Technical  
Institute**  
717 West Highway 131  
Clarksville, Indiana 47130  
Telephone 812 / 945-2643

### STATE COLLEGE OFFICE

**Indiana Vocational  
Technical College**  
5221 Ivy Tech Drive  
Indianapolis, Indiana 46268  
Telephone 317 / 297-3210



**FROM  
THE  
PRESIDENT:**



The 20th century is a time of technological change -- a time when technically trained people are needed more than ever before. The future belongs to those who prepare for the opportunities that lie ahead.

Many statistics show that the more education you acquire the better income you are likely to receive. Now, more than ever before, society and technology require useful and responsible citizens. The purposes of I V Tech are to provide for you selected occupational programs of study so that you will gain both ability and confidence to meet the challenges of your chosen career.

The faculty at I V Tech is comprised of dedicated and capable teachers. Each is ready to share his ability with you and will take pride in assisting you as you prepare for your chosen vocation. We hope that you in turn will share with us your talents, ideas, and above all, your enthusiasm.

I V Tech is an "open-door" institution of higher education, designed to serve all citizens and communities of this state that are in need of occupational education opportunities. The doors of this College are always open to any person beyond high school age who wishes to take advantage of the privilege of making himself a better citizen through occupational education.

We encourage you to read this catalog carefully, and we invite you to visit a technical institute to learn more about the opportunities available within our College.

**Harry A. McGuff**  
**President**





**Indiana Vocational Technical College Administration Building, Indianapolis**

## **THE COLLEGE**

Indiana Vocational Technical College believes that each individual, regardless of economic or social status, should be provided the opportunity to develop to his and society's ultimate benefit.

The College believes that post-high school occupational education is an increasing necessity for an ever-growing portion of the citizens of Indiana. IVTC demonstrates the intent of the General Assembly of the State of Indiana by providing occupational education resulting in definable job skills through a coordinated system of regional institutes, located throughout the state so as to be of reasonable access to all citizens.

Indiana Vocational Technical College believes in pre-technical and related education integrated as necessary throughout the occupational curriculum to enable students to develop self-awareness and social responsibility so as to successfully compete in a chosen occupational field.

The College believes in directing its programming to serve the needs of the individual within his community as well as the needs of the community as a whole.

From this philosophical base, the following objectives are established for the Indiana Vocational Technical College system:

1. To meet the needs of the residents of the state for post-high school vocational and technical training and retraining.
2. To provide a community-oriented system of regional technical institutes emphasizing occupationally-oriented educational opportunities not available publicly or privately in sufficient numbers to meet the needs of residents and/or employers.
3. To offer (1) vocational and technical education programs that are occupationally oriented, and (2) general education programs necessary to complement the requirements of specific vocational and technical skills.
4. To ensure that acceptable skill and knowledge levels are attained by students certified as graduates of Indiana Vocational Technical College.
5. To develop an understanding and appreciation for occupational preparation and individual pride in the possession of such skills and knowledge.
6. To provide the opportunity to attain occupational competence compatible with the individual student's interests and abilities regardless of financial ability or previous education experiences.
7. To provide guidance, evaluation, counseling, and placement services for students to meet the needs for sound and practical occupational selection, preparation, and placement.
8. To provide new industrially oriented education and training opportunities based on present and projected employment opportunities in the state, that will provide a trained work force for new and expanding industries and in addition will serve as an inducement for industrial plant location in the state.

# THE STUDENT

## COLLEGE EXPENSES

Indiana Vocational Technical College seeks to provide quality training opportunities at the lowest possible cost. As a state assisted educational institution, fees paid by the student cover only a minor part of the operating costs of the College and its technical institutes.

Free tuition is granted to all students who are residents of the State of Indiana. All non-resident students are required to pay a tuition fee in addition to the General Service Fee.

### Schedule of Fees (Per Quarter)

#### Residents of Indiana

For 10 credit hours or more	
General fee .....	\$100
Plus lab fee where applicable	
For less than 10 credit hours	
General Fee per credit hour .....	\$ 10
Plus lab fee where applicable	

#### Non-Residents of Indiana

For 10 credit hours or more	
Tuition .....	\$100
General fee .....	\$100
Plus lab fee where applicable	
For less than 10 credit hours	
General fee per credit hour .....	\$ 10
Tuition per credit hour .....	\$ 10
Plus lab fee where applicable	

### **ancillary service fees**

These fees cover the cost of the respective services rendered to the student, such as lockers, intramural activities, parking, student insurance, health services, and other non-curricular educational and recreational activities.

### **laboratory fees**

Fees cover the cost of replacement of classroom and laboratory equipment and expendable supplies used in the course.

### **graduation fee**

A student making known at the beginning of his final quarter his intent to graduate will be charged a fee of \$10. If the student does not graduate because of failure to meet the graduation requirements, this fee will be refunded.

## **FINANCIAL AIDS**

Indiana Vocational Technical College recognizes that educational opportunities are limited for many students because of the student's limited financial resources. Therefore, within the financial resources available it is the policy of the College to provide financial assistance to worthy and deserving students who have demonstrated financial need.

### **TYPES OF AID AVAILABLE**

- |                      |   |
|----------------------|---|
| <b>Scholarships:</b> | State Scholarships, Local College Regional Institutes, Hospitals, Businesses and Industries.  |
| <b>Loans:</b>        | Federally-insured loan program through local lending institutions.  |
| <b>Employment:</b>   | College Work-Study Program, Outside employment.   |
| <b>Grants:</b>       | Local College Grants: Grants from outside organizations, businesses and industries; Educational Opportunity Grants (Federal); State Educational Grants. |

Ivy Tech participates in the College Scholarship Service (CSS) of the College Entrance Examination Board. Participants in CSS subscribe to the principle that the amount of financial aid granted a student is based on financial need. The CSS assists colleges, universities, and other agencies in determining the student's need for financial assistance.

The Office of Student Services has the responsibility for administering the financial aids program of the College.

### **Veterans**

As a state-supported institution, Indiana Vocational Technical College and its technical institutes have been approved for veteran training. A veteran enrolling in IVTC must make application for a certificate of eligibility directly to Veterans Administration Regional Office, 36 South Pennsylvania Street, Indianapolis, IN 46204. Local VA offices may be located near a technical institute where assistance may be obtained in making application.

Educational benefits for orphans of veterans and vocational rehabilitation of veterans are also processed by these VA offices. Certificates of eligibility must be received by the student before official enrollment is permitted. Applications for eligibility should be made with the VA office at least 30 days prior to the date the student is to enroll.

A refund of the unused portion of tuition, fees, and other charges will be made to veterans or eligible persons who fail to enter or fail to complete the course as required by Veterans Administration regulations. The refund will be within 10 per cent of an exact pro rata refund. No more than \$10 of the established registration fee will be retained if a veteran or eligible person fails to enter the course.

### **mdta students**

For students enrolling under the sponsorship of the Manpower Development and Training Act (MDTA), final approval from the local office of Indiana Employment Security Division as the authorizing agency must be received before final enrollment and class attendance may begin. Students seeking training under this program must make their application at least 30 days prior to the date the college quarter is to begin or the course is to start. An official college application for

admission must be submitted with the request for training to the local employment security office.

### **the college work-study program**

The Federal College Work-Study Program, originally part of the Economic Opportunity Act of 1964, in 1965 was added to the Higher Education Act. Preference is given to students from low income families who need a job to help pay for college expenses.

Under this program, students work on campus or in the community performing jobs in the public interest. While they may work no more than fifteen (15) hours per week when school is in session, they may complete a regular forty (40) hour work week during vacation periods. To be eligible for the Work-Study Program a student must be accepted for enrollment as a full-time student.

### **federally insured student loans**

This loan program is designed to make it possible for students to borrow from private lenders to help pay educational costs. Up to \$1,500 per academic year may be borrowed (\$7,500 aggregate maximum) from eligible lenders. For a student whose adjusted family income is less than \$15,000 a year, the Federal government will pay the lender the total interest due (up to seven per cent) on the unpaid principal balance while the student is in school or during other periods of deferment. If a borrower dies or becomes permanently disabled, his loan will be cancelled.

### **other loans**

Applications for loans may be obtained from banks, savings and loan associations, credit unions, pension funds, insurance companies, and similar institutions which participate and qualify as eligible lenders. Loans are approved or denied at the discretion of the lender. The Ivy Tech Foundation is another source of loans to worthy students. Contact the Student Services Office for more information.

### **educational opportunity grants**

The 1965 Higher Education Act created a Federal Student Assistance Program directed at students from low income families. Under this program, the College must provide the student an amount equal to the federal funds provided by



the EOG program. The College's contribution can be in the form of a job, loan or scholarship. The total amount of the award ranges from \$200 to \$1,000 per year, and is determined by the amount a student's parents can contribute to his education. The grants are considered as gift assistance and do not have to be repaid. To qualify academically, a student must either be accepted for enrollment or, in the case of a currently enrolled student, be in good academic standing. Only full-time students are eligible for assistance under the Educational Opportunity Grant program.. The regional technical institute must have at least correspondent status from the accreditation agency to be eligible to participate in this program.

#### **college sponsored grants-in-aid**

All full-time Ivy Tech students are eligible for grants-in-aid offered through the College. These funds are used for students who are carrying at least 12 credit hours. Grants-in-aid may be renewed if the student maintains a 2.00 cumulative index. Applicants are judged on their need and academic ability. Grants-in-aid are usually awarded to cover the cost of fees.

## **ADMISSION REQUIREMENTS AND PROCEDURES**

#### **campus visits**

Campus visits to regional technical institutes are encouraged by the College. It is recommended that an initial visit to the prospective facility be made before an application is filed.

#### **college year**

The college year begins in September and continues through August. The 12 months are divided into four quarters, exclusive of holidays and vacations. It is possible to enter some programs at the beginning of the second, third, or fourth quarter.

When qualifications for admission are met, the student may be admitted to some courses up to the beginning of the second week of any quarter. When such admission is granted, the student will be required to pay the full fees for the quarter and must meet the regular course requirements to receive college credit.

## **admission policy**

In accordance with its stated purpose, the College has adopted an "open door" admission policy for citizens of the State of Indiana. The College admission policy makes provisions for admission of any person regardless of race, color or national origin, in accordance with Title VI, Civil Rights Acts of 1964, and operates in compliance with the law. Citizens of other states may be admitted provided they pay additional tuition fees and that they do not displace an Indiana citizen.

The College also defines "open door" admission to mean that the doors of the College are open to all above the usual high school age and to those who have permanently withdrawn from school and are above 16 years of age. The College reserves the right to guide the student into the program that best meets his objectives.

## **general admission requirements**

To be admitted to the College, the student must meet one of the following criteria:

1. Be a graduate of high school, or
2. Have successfully completed a high school equivalency examination, or
3. Have demonstrated an interest in and need for post-high school occupational education as offered by the College.

The student must have on file in the technical institute of his choice a completed application and a completed health examination form signed by his physician.

The student must have on file in the technical institute an official transcript of his previous school records. Each full-time student will be required to take the Comparative Guidance and Placement test administered by the College. A fee of \$4 is charged to cover the cost of the test.

## **entrance procedure for full-time programs**

1. Contact the technical institute for official application forms.
2. Complete the forms and return them to the technical institute Office of Student Services.

3. Request high school registrar to mail an official transcript of credits to the technical institute. Official transcripts from any college or other post-high school institution previously attended must also be sent to the technical institute.
4. Take Comparative Guidance and Placement test which is given at each technical institute. Notification of when tests will be given will be sent to applicants. Report for testing and personal interview at the appointed time and place.
5. Provide evidence of a recent physical examination from family physician.
6. Pay all fees or make final arrangements for paying fees at time of official registration.

## **EVENING COLLEGE**

Class offerings in the Evening College parallel those offered during the regular day program and will earn credit and may be used to meet the requirements for technical or semi-technical certification. The Evening College operates on the same quarter plan and recognizes the College calendar for registration, holidays and vacations. Requirements for admission are:

1. Submission of an Application for Admission at the time of enrollment in classes.
2. Completion of Registration procedures including payment of fees.

Students who are working toward a specific curriculum or program certification should make provisions for regular admission to the College through the Student Services Office before they have completed the equivalent of one quarter's work or 15 credit hours.

## **TRANSFER CREDIT**

Transfer students must meet the general admission requirements of the College.

A student may be admitted from other recognized col-

leges and universities with such transfer credits as his previous record may warrant in so far as his credits fit the program of studies chosen at Indiana Vocational Technical College. Such students must have an official transcript sent directly from the previous institution attended. To qualify for graduation, a student must complete the last 15 credit hours of the program requirements at Indiana Vocational Technical College. The College reserves the right to conditionally accept students who have been dismissed from other colleges or universities for disciplinary reasons.

The dean or director of a regional technical institute shall have the right to refuse admission to any student who has been dismissed for disciplinary reasons from other colleges or universities or from high school.

## **ACADEMIC POLICIES**

### **attendance**

In order that credit may be received for work accomplished, students are required to be in prompt and continuous attendance at all classes. The instructor has no alternative other than to demand evidence of the same quality of work from those who absent themselves from classes as from those who are in regular attendance. Absence may render a student ineligible for credit in the course. Excuses for absences due to minor illnesses (less than three full consecutive days) are handled by instructors.

### **veterans' attendance policy**

The College will maintain a record of all tardiness and absences. These records will include reasons for absences and tardiness excused by the College.

Unexcused absences in excess of five days per month will result in the student being dropped from the College. Only those absences due to sickness, death in the immediate family, or similar reasons will be considered excusable. Re-entrance may be certified when conditions causing the excess absences have been reported.

### **college credit**

College credit is that credit described in quarter hours

and awarded at the completion of an official course. It is used in determining the student's cumulative index.

#### **credit hour**

The "credit hour" is defined as the number of hours per week in lecture class and the number of weeks in the session. One credit hour is assigned to a lecture class that meets 50 minutes a week over a period of a quarter; one credit hour is assigned for a laboratory that meets two hours per week per quarter, and one credit hour is assigned for clinical field work experience, or occupational experience, that meets three hours per week per quarter.

#### **matriculated student**

A student is considered to be a matriculated student when he completes the first registration following admission as a regular student. He will have (1) stated a program of intent, and/or an intent to pursue a technical certificate or an associate degree in a program area; (2) met the admission requirements for that program; (3) had a faculty advisor assigned.

#### **normal load**

A normal student load is determined by dividing the credit hours required for graduation in a program by the number of quarters normally required for graduation. The normal quarter credit-hour load average is 15 to 17 credit hours.

#### **maximum load**

Twenty credit hours per quarter is considered a maximum load.

#### **quality point**

A "quality point" is a numerical value assigned to the grade a student receives in a course in order to provide a quantitative determination of the student's scholarship. Used in computing cumulative index, quality points are calculated to three decimals and rounded out to two decimals.

#### **cumulative index**

The "cumulative index" is a measure of a student's scholastic success obtained by dividing the total number of quality points earned by the total number of credit hours of course work attempted.

## **final examination**

A final examination may be required for the completion of a course and for the receipt of a passing grade. Absences from scheduled final examinations, with the privilege of a make-up examination, must be arranged with the instructor.

## **grading**

It is the policy of the College to use grades to report student progress in and/or completion of a credit course. Student performance in courses is indicated by one of the following grades:

<b>Grade</b>	<b>Quality</b>	<b>Quality Points</b>
A	Superior	4
B	Above Average	3
C	Average	2
D	Passing	1
F	Failing	0
I	Incomplete	0
AU	Audit	not computed
WP	Withdrawal Passing	not computed
WF	Withdrawal Failing	0
W	Withdrawal	not computed
DE	Deferred Grade	not computed

The grade "I" indicates incomplete work. It may be removed by completing the requirements of the course within a period prescribed by the instructor but in no case later than the end of the subsequent quarter. Otherwise, the grade will be changed to an "F" on the official record.

The grade "DE" indicates a course lasting longer than the normal 11-week quarter. This grade is not computed and the student will receive a letter grade at the completion of the project or course.

## **mid-quarter deficiencies**

Informal reports of a mid-quarter deficiency will be issued by the regional technical institute to all students in

credit courses doing unsatisfactory work (D or F grades).

### **academic honors**

Full-time students enrolled in credit courses (or part-time students who have completed 12 or more credit hours in increments of 12 hours) and have a quality point average of 3.50 or above are eligible to be named to the regional dean's or director's list.

### **academic probation**

A student who has less than a 2.00 cumulative index, as the result of the total of all credits attempted at Indiana Vocational Technical College, is considered to be on academic probation.

### **academic ineligibility**

If, after 45 credit hours at the College, a student has a quality point average of less than 2.00, he must receive permission from the Regional Student Status Committee before registering for further course loads.

### **official withdrawal**

"Official withdrawal" is considered to be that process in which the student notifies the appropriate authorities of his withdrawal from the College thereby making it an official withdrawal. Under certain acceptable conditions, students may be permitted officially to withdraw from the College. Acceptable reasons would be sickness, hardship, death in the family, or military service. Official withdrawal should be instituted through the Student Services Office in each technical institute.

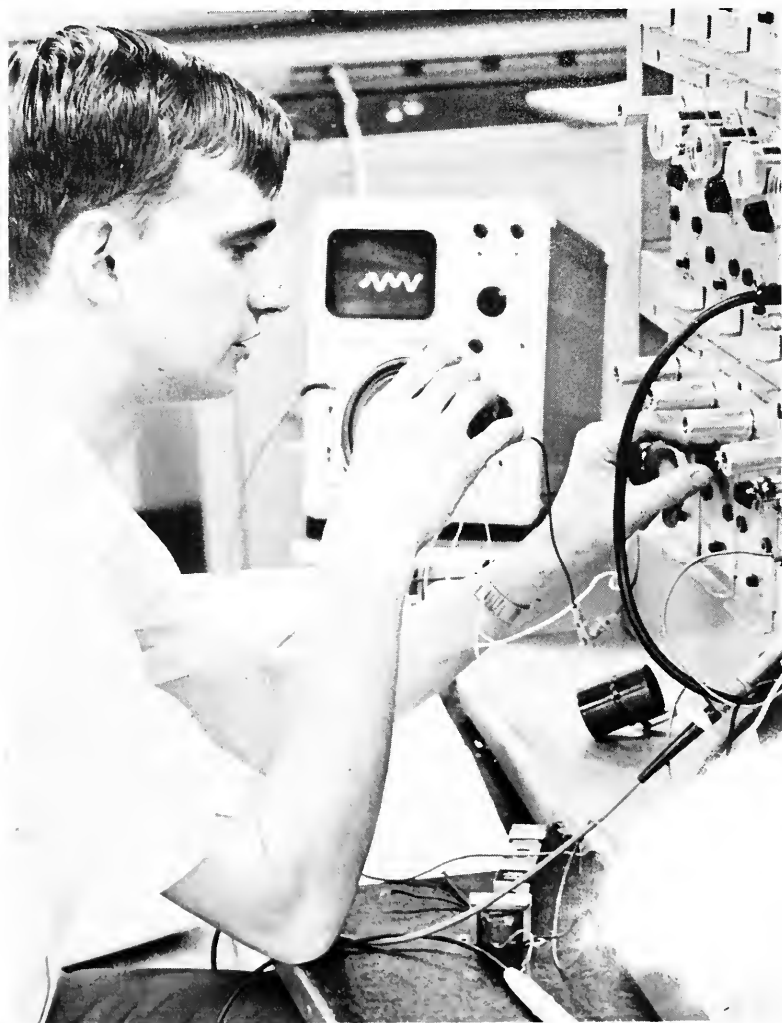
Students who withdraw any time after classes begin will receive a grade of record. If the student is required to officially withdraw from classes because of military service obligations, he is entitled to take an early final examination for the class or classes. A copy of the active military duty orders must be presented to qualify for early examination.

### **grades for withdrawals**

The student who withdraws prior to the end of the sixth week of classes will receive a grade of "W." If the student withdraws during the seventh through the tenth week of classes, but prior to the final examinations for the class, he

receives a grade of "WP" if he is passing the course at the time of the withdrawal, or a grade of "WF" if he is failing at the time of withdrawal. The "WF" grade will affect the student's grade average.

The student who withdraws during the week prior to the beginning of final examinations will receive a letter grade according to the College schedule: A, B, C, D, F, or I.





## **PLACEMENT**

Indiana Vocational Technical College believes assistance in placement of graduates is an integral function of the College. In recognition of this concept, the College has established a state-wide placement office as a service of the College staff. This service includes:

1. Coordination of regional technical institutes' activities for placement.
2. Providing a complete file of all graduates and their career interests.
3. Providing a complete file of industrial and business employment needs and projections of employment opportunities in Indiana.
4. Maintenance of a system of correlation of graduate career intentions and industrial and business needs for employees.

As time permits, the placement service will assist students who need part-time work. Although such opportunities are limited, the school will communicate requests for part-time help to the students who have registered with the placement service for part-time employment.

## **HOUSING**

Indiana Vocational Technical College does not have dormitories available for students. Out-of-town students needing accommodations should contact the regional institute's Office of Student Services for information regarding locally available housing.

## **STUDENT ORGANIZATIONS**

It is the philosophy of Indiana Vocational Technical College that co-curricular activities complement the academic program of the institution. Students are encouraged to participate in all phases of the student activities program when such participation is consistent with sound educational practices.

All organizations must operate under the policies and guidelines as set for the institution by the Board of Trustees. No organizations will be permitted to function in Indiana Vocational Technical College facilities without the approval of the administration and the student senate. All approved organizations must be open to all eligible candidates for membership. Each organization must make available to the student senate all records of officers, membership, and financial transactions of the group.

#### **student senate**

The students at Indiana Vocational Technical College, with the desire to establish a system of participation in student government and to increase the spirit and reputation of the College, have developed student senates.

Student senates are vested with authority to legislate on subjects concerning student affairs, unless regulation has been otherwise delegated, subject to the approval of the appropriate administrative office.

Constitutions of all student organizations must be approved by a simple majority or a quorum. A quorum in this section shall be defined as a simple majority of the total membership and one faculty advisor.

Membership on the student senates normally is comprised of one representative from each class of technology and the president of each recognized school club and organization.

A representative must be a member of the class or organization from which he is chosen. He must have a cumulative index of 2.5 or better. Representatives shall serve a four-quarter term of office.

The ranking officer of each organization represented on the student senate shall submit proof that each representative of his organization has been elected by a majority vote in an election in which at least half the members of his organization cast a ballot. A secret ballot is required for all contested elections.

The student senate may expel any representative for mal-performance of his duties.

The student senate shall elect from its membership, in a joint meeting of incumbent representatives and represen-

tatives-elect, at the last regular meeting before spring vacation, a president, vice-president, a treasurer, a recording secretary, and a corresponding secretary. These officers shall assume office immediately upon their election and shall serve until the next election.

#### **committee on student status**

A committee of three elected faculty members and one student who is president of the student senate, who serves for one calendar year, will make recommendations relating to disciplinary or academic status of students.

#### **class organizations**

Each class, first-year and second-year, may organize its group by the election of class president, vice-president, secretary-treasurer, class reporter, and the at-large representatives for the student senate. Class organizations will be under the sponsorship of the student senate and their primary purpose is for class-wide social activities and sports functions. The election of class officers will occur during the first three weeks of the fall quarter. Each class will have a faculty advisor.

#### **clubs**

Hobby, social, or interest clubs may be organized and must be chartered by the student senate. Clubs must have the following elected officers: president, vice-president, secretary-treasurer, club reporter, and a representative to the student senate. All clubs will have a faculty advisor. The student senate will determine if sufficient interest exists to form or to continue a club.

#### **intramural sports**

Sport activities of the College consist only of intramural sports sponsored by the student senate. Leagues may be formed where the interests of the students justify their organization.

#### **social activities**

All group activities of Indiana Vocational Technical College must be approved and sponsored by the student senate and the administration. Classes, clubs, and other groups are encouraged to plan and conduct social activities for their members. The student senate will organize and conduct

school-wide social activities and gatherings. All students are encouraged to participate in these activities and many of them will be open for the students' guests.

#### **professional and trade societies**

Student chapters of the various societies will be formed on the same basis and under the same requirements as other student organizations.

### **GENERAL INFORMATION**

#### **financial responsibility**

Satisfactory financial arrangements with the College must be completed before a student may complete registration. If financial obligations are not satisfied by the end of the quarter, the College reserves the right to withhold grade reports. College transcripts will not be issued until all financial obligations are paid in full.

#### **library**

Indiana Vocational Technical College provides a library which is basically vocationally and technically oriented in its selection of books, periodicals, and pamphlets. It also offers a varied reading selection for current events, social development, and general reading.

#### **book store**

A book store is maintained at most regional technical institutes to make available the books and supplies needed by students. The book store will be open throughout the academic year and is operated through the summer quarter by institutes with summer programs.

All books and regular supplies needed for training will be offered for sale at the book store. When special supplies are needed which are specifically related to laboratory requirements in a curriculum, they will be provided as part of the laboratory fee.

#### **lost and found**

A lost-and-found service is normally maintained in the book store, and all lost or found articles should be handled at that location.

### **college colors**

The College colors are blue and gold.

### **office hours**

Except for Saturdays, Sundays, and holidays, the offices of the College are open from 8 A.M. to 5 P.M.

### **personal property**

The College cannot be responsible for personal property that is lost or misplaced. Students should mark or identify each item of personal property for their own protection.

### **messages**

The College office cannot accept or deliver personal messages or telephone calls for students. Exception to this policy is made only in case of extreme emergency.

## **FACULTY**

A quality faculty serves at each regional technical institute. In faculty selection, considerable emphasis is placed on actual experience in the area of technical specialization as well as in academic achievement. Primary consideration is placed on the instructor's ability to convey knowledge. Faculty members are expected to maintain their professional status by keeping informed on current trends in their fields.

## **RECOGNITION**

Indiana Vocational Technical College is a member of the Indiana Conference for Higher Education, the American Association of Junior Colleges, the Indiana Association of College Admissions Counselors, and the Indiana Student Financial Aid Association.

The College is approved for the education of veterans and orphans of deceased veterans who are eligible for educational benefits. The College is endorsed by the Rehabilitation Division of the State of Indiana.

Courses of study and curricula for each occupational area of concentration are approved where applicable by appropriate certifying agencies, as well as by business, labor and industrial organizations.

Seven of Indiana Vocational Technical College's regional institutes have achieved Correspondent Status with the Commission on Colleges and Universities of the North Central Association of Colleges and Secondary Schools. Correspondent status indicates that the institution has given evidence of sound planning and the resources to implement these plans, and has indicated an intent to work toward accreditation. Correspondent status is not an accredited status, nor does it assure or imply eventual accreditation. The College is continuing to work for full accreditation for all its regional institutes. Those regional institutes which have achieved Correspondent Status are those with offices at South Bend, Fort Wayne, Lafayette, Kokomo, Terre Haute, Indianapolis and Columbus.

Additional information may be obtained at the Student Services Office at each regional institute.

## **COUNSELING SERVICE**

Counseling services are available at each technical institute. These services include educational and vocational aptitude tests for students. Counselors will also help acquaint students with the community and state agencies and other resources which may be useful to the students.

As a student progresses toward the completion of a training program, there may be occasions when counseling services will be desired. The College encourages close cooperation between student and teacher and grants to each student the freedom to contact his teacher department head, counselor, or director at any time to talk over problems or just to get acquainted.

## **CURRICULUM AND GRADUATION REQUIREMENTS**

It is the policy of the College to award the degree of Associate in Applied Sciences and the Technical Certificate at graduation to those students who have met the graduation requirements listed below. Graduation for the award of the Associate Degree will be held within two weeks after the completion of the spring quarter of classes. Attendance at graduation is required unless the student is excused by the regional dean or director.

## **requirements for graduation**

To graduate with an Associate Degree the student must:

1. Earn a minimum of 90 quarter credit hours. The last 15 credit hours must be earned at the College.
2. Have a cumulative index of 2.00 (C) or higher. Credits from other colleges are not used in this computation.
3. Complete an approved curriculum and (1) be a high school graduate, or (2) have successfully completed a high school equivalency examination.
4. Must have satisfied all outstanding financial obligations due the College.
5. The student must file a notice of "intent to graduate" with the technical institute Office of Student Services at the beginning of the quarter the student intends to graduate.
6. Associate Degree students are required to attend commencement unless specifically excused in writing by the regional dean or director.

To graduate with a Technical Certificate the student must:

1. Have earned a minimum of 45 quarter credit hours. The last 15 hours must be earned at the College.
2. Have a cumulative index of 2.00 (C) or higher. Credits from other colleges are not used in this computation.
3. Complete an approved curriculum.
4. Must have satisfied all outstanding financial obligations due the College.

## **ADVISORY COMMITTEES**

The Indiana Vocational Technical College curriculum is developed with the assistance and advice of area employers. Through advisory committees composed of representatives of the various employing areas, the College is kept informed of

the needs of such employers, the training, types of equipment and the performance standards needed.

Advisory committees represent business, industry, commerce, agriculture and government institutions.

The advisory committees insure that programs presented by the College are adequate, up to date, and complete and that students are well equipped with employable skills.

## **DISCIPLINARY DISMISSAL**

An instructor, through the regional dean or director, may, at any time, recommend that a student be withdrawn from a course for disciplinary reasons. A student recommended for dismissal will be notified by his faculty advisor and will be given an opportunity to discuss the matter with the Student Status Committee before final action is taken. Disciplinary dismissals from the College will be at the discretion of the regional dean or director.

The grade policy of W, WP or WF will apply on disciplinary dismissal as it does for official withdrawals. A statement showing disciplinary dismissal will be noted on the student's permanent record.

Any student who is dismissed for non-academic cause or misconduct shall not be entitled to a refund.

## **CONDUCT**

College students are considered to be mature men and women. Their conduct, both in school and out, is expected to be dignified and honorable. The responsibility for success rests largely on the shoulders of the individual student.

The administration does not set many rules of conduct. On the contrary, it is expected that students will consider they are living in a democratic situation and that the reputation of the institution rests on their shoulders. Common courtesy and cooperation at all times make conduct rules unnecessary.



The following resolution has been adopted by the College Board of Trustees:

WHEREAS the mission of Indiana Vocational Technical College is to teach, conduct research and serve the public through the proper use of its facilities and personnel, and irresponsible acts of individuals may militate against the effective accomplishments of the College; and

WHEREAS the unreasoning acts of a few, whether they be students, faculty members, or outsiders not connected with the College, likewise militate against the effective pursuit of education by a student; and

WHEREAS the spirit of protest and independence that is normal in students has in the present time been evidenced by excessive opposition to established principles of law and order, by abuse of personal freedoms, by misuse of the basic rights of free speech and by the use of displays of force:

The Board of Trustees of Indiana Vocational Technical College hereby resolves:

That all basic rights of free speech and independent action of individual citizens will be preserved so long as any exercise of such rights does not infringe upon the freedoms and rights of others.

That any grievance presented in a calm and reasonable manner will be given fair and thorough consideration by the respective administrations, including Regional Boards of Trustees, and a just and impartial answer will be returned with the minimum delay.

HOWEVER, any person, student, faculty member, or employee of the College who takes part in any activity which interferes with other persons' lawful use of the property of Indiana Vocational Technical College and regional institutes, or who performs in such manner as to have the effect of denying or interfering with the lawful use of such property by others, will be requested to leave the premises of the College or its Regional Institutions, and

If any person, student, faculty member or employee of the College refuses to leave the premises of any property of the College, when so requested, regardless of reason, by any duly constituted official of Indiana Vocational Technical College including its regional institutions, then proper law en-

forcement officials will be requested to arrest such persons as trespassers, and such persons will be subject to such disciplinary action by the College as the proper officials deem reasonable, including expulsion and/or termination of benefits and rights.

If any person or property is in danger of harm from any activities such as described above, that law enforcement officials will be requested to arrest such offenders and remove them from the premises.

This Resolution is hereby adopted and made a matter of corporate record, this 31st day of March, 1969.



Ivy Tech Graduate John Peterson At Work As Head Chef In A South Bend Club

# THE CURRICULA

## RELATED STUDIES

Industrial, technical and para-professional programs at IVTC include a core of courses that provide each student with the necessary background to support and to master knowledge and skills in his occupational choice. These courses, which include communication skills, social science, mathematics and science, shape a continuing foundation upon which the student builds specialization in career occupations.

Each program is designed to meet the requirements of the occupation the student plans to enter.

### Required Core of Courses for the Associate Degree

Communication Skills	6 hours
Mathematics	5 hours
Social Science (including courses in Human Relations, Consumer Economics and Occupational Orientation)	8 hours
Electives from Related Studies courses	6 hours
	<hr/> 25 hours

Pre-technical courses provide the student with basics for entry levels in occupations. Placement in the program is based upon educational records, work experience, test scores, and information gained by interviews that indicate the likelihood of success in course work and its related occupations.

## **AGRICULTURAL AND INDUSTRIAL TECHNOLOGY DIVISION**

The increased mechanization of American agriculture and industry has created a tremendous need for skilled technicians who have additional technical preparation above the high school level. To meet this need, the College offers four associate degree programs and 12 technical certificate programs.

The associate degree programs offered under this division are Agricultural Equipment Technology, Applied Fire Sciences, Automotive Service Technology, and Heating and Air Conditioning Technology. The programs leading to a technical certificate are Automotive Body Repair, Automotive Mechanics, Building Construction, Diesel Engine Mechanics, Fire Protection, Ground Water, Heating and Air Conditioning, Industrial Electricity, Tool Room Machine Operator, Radio and Television Repair, Machine Tool Repair, and Welding.

These programs are designed so the student will know "how to do it" and be able to use his special knowledge to perform operations, make calculations, conduct laboratory developmental work, plan and conduct tests and/or to service products in the student's occupational specialty area.

### **Agricultural Equipment Technology**

Agricultural occupations afford many opportunities for excellent employment. Increased specialization and mechanization in agriculture have fostered new occupations. Today's farms are larger, more specialized, and produce a higher volume of produce than in the past. With this increased mechanization, the need for skilled technicians to fill positions in the manufacture, selling and servicing of agricultural equipment has increased.

Agricultural equipment technicians who can service, repair, maintain and demonstrate modern agricultural equipment are needed throughout the State of Indiana. The graduate of this program will know how to repair and service the many types of agricultural equipment utilized in the state and will be able to demonstrate it.

Employment opportunities may be found with agricultural equipment manufacturing firms, farm equipment sales and service organizations, elevators, farm supply firms and food processing industries. This program is offered at Indianapolis.

**AGRICULTURAL EQUIPMENT TECHNOLOGY  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0317 Fundament. of Math	5	0	5
0725 Occupa. Orientation	1	2	2
1402 Farm Machines I	2	4	4
1431 Farm Shop	1	4	3
	<u>10</u>	<u>12</u>	<u>16</u>

**SECOND QUARTER**

0202 Tech Comm Skills	1	2	2
0755 Human Relations	3	0	3
1404 Farm Machines II	2	4	4
1420 Tractor Systems	2	4	4
6608 Int Comb Engines	1	4	3
	<u>9</u>	<u>14</u>	<u>16</u>

**THIRD QUARTER**

0211 Oral Comm	2	0	2
0450 Mechanics	3	2	4
1405 Farm Machines III	2	4	4
1421 Trac Hydraulic Sys	2	4	4
	<u>9</u>	<u>10</u>	<u>14</u>

**FOURTH QUARTER**

0457 Environ. Science	3	0	3
0505 Consumer Econom.	3	0	3
0750 Psychology	3	0	3
1406 Farm Machines IV	2	4	4
1410 Tractor Eng I	2	4	4
	<u>13</u>	<u>8</u>	<u>17</u>

**FIFTH QUARTER**

1411 Tractor Eng II	2	4	4
1415 Ag Diesels I	2	4	4
1432 Suburban Farm Equip & Access.	2	4	4
Elective			3
			<u>15</u>

**SIXTH QUARTER**

1412 Tractor Eng III	2	4	4
1416 Ag Diesels II	2	4	4
1430 Bookkeeping, Parts & Service Mgt	3	2	4
Elective			3
			<u>15</u>

Total Quarter. Hours: 93

**Applied Fire Science**

Modern fire fighting techniques require an intelligent, courageous, and dedicated fire fighter. To keep pace with the rapid technical changes and to cope with public service problems, a highly skilled fire fighter who is thoroughly prepared in fire science is necessary. The need for job upgrading to keep abreast of the technical standards of fire fighting is apparent in community fire departments. This two-year program is offered to meet community needs for a high degree of fire service. Those completing the one-year program will receive a technical certificate in fire protection.

The Applied Fire Science program emphasizes the mastery of the appropriate subject skills and the acquisition of technical and general information necessary in the development of mature and knowledgeable judgment in fire fighting methods and techniques as well as administration.

Employment opportunities for the graduate of this program, provided he can pass the required medical and physical tests, would be with a local fire department, an industrial plant having safety and fire prevention departments or in a fire underwriters group. This program is offered at South Bend.

# **APPLIED FIRE SCIENCE ASSOCIATE DEGREE**

## **FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro/Tech Comm	1	2	2
0317 Fund. of Math	5	0	5
0725 Occ. Orientation	1	2	2
1601 Intro to Fire Tech	3	2	4
1602 Fire Apparatus I	2	4	4
	<u>12</u>	<u>10</u>	<u>17</u>

## **SECOND QUARTER**

0202 Tech Comm Skills	1	2	2
0755 Human Relations	3	0	3
6502 Electricity	2	4	4
1603 Fire Apparatus II	2	4	4
1606 Fire Dept Hydraulics	2	4	4
	<u>10</u>	<u>14</u>	<u>17</u>

## **THIRD QUARTER**

0211 Oral Comm	2	0	2
1607 Fire Alarm & Comm Sys	1	2	2
1608 Fire Fight Strat & Tact	2	4	4
1609 Fire Prot Equip / Sys	1	2	2
Elective, Restricted *			3
Elective, Related Ed			3
			<u>16</u>

## **FOURTH QUARTER**

	Lec	Lab	Cr
0440 Chemistry I	3	2	4
0750 Psychology	3	0	3
1604 Hazardous Mat I	2	2	3
1610 Rescue Pract & Proc	2	4	4
Elective, Related Ed			3
			<u>17</u>

## **FIFTH QUARTER**

0441 Chemistry II	3	2	4
6010 Ind Safety & Fire Cont	3	0	3
1605 Hazardous Mat II	3	2	4
1611 Fire Investigations	2	2	3
Elective, Restricted *			3
			<u>17</u>

## **SIXTH QUARTER**

0204 Technical Reporting	3	0	3
1612 Fire Svc Org & Mgt	3	0	3
1613 Fire Dept Spec	2	4	4
1614 Fire Prev & Inspect.	1	2	2
1615 Legal Prob in Fire Svc	3	0	3
	<u>12</u>	<u>6</u>	<u>15</u>

Total Quarter Hours: 99

\*Electives, Restricted:

2101 Typewriting I	2	2	3
6001 Tech of Superv. I	3	0	3
6428 Mech & Elect Equip	3	0	3
6430 Bldg Mat	3	0	3

# **FIRE PROTECTION TECHNICAL CERTIFICATE**

## **FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro /Tech Comm	1	2	2
0317 Fund. of Math	5	0	5
0725 Occ Orientation	1	2	2
1601 Intro/Fire Tech	3	2	4
1602 Fire Apparatus I	2	4	4
	<u>12</u>	<u>10</u>	<u>17</u>

## **SECOND QUARTER**

0202 Tech Comm Skills	1	2	2
0755 Human Relations	3	0	3
6502 Electricity	2	4	4
1603 Fire Apparatus II	2	4	4
1606 Fire Dept Hydraulics	2	4	4
	<u>10</u>	<u>14</u>	<u>17</u>

## **THIRD QUARTER**

	Lec	Lab	Cr
0211 Oral Comm	2	0	2
1607 Fire Alarm/Comm Sys	1	2	2
1608 Fire Fight Strat & Tact	2	4	4
1609 Fire Prot Equip / Sys	1	2	2
Elective, Restricted *			3
Elective, Related Ed			3
			<u>16</u>

Total Quarter Hours: 50

\*Elective, Restricted:

2101 Typewriting I	2	2	3
6001 Tech of Supv I	3	0	3
6428 Mech/Elect Equip	3	0	3
6430 Bldg Mat	3	0	3

## Automotive Body Repair

The Automotive Body Repair program is geared to the needs of the industry, and includes instruction on up-to-date equipment, using modern methods.

The areas of instruction include shrinking and stretching methods, alignment of body, hoods, deck lids, wheel alignment, and mixing and matching of paints. All of these lead to restoration of the complete automotive body to its original contour and finish. An area which receives much emphasis is gas welding, which in turn makes it possible to repair and restore the automotive body and frame.

Many opportunities are available for the student who develops a high degree of skill, which may enable him to establish a business of his own or to obtain employment in an automotive dealership or automotive body establishment. This program leads to a technical certificate in Automotive Body Repair and is offered at Gary, Fort Wayne, Terre Haute and Clarksville.

### TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
6614 Basic Auto Body Rpr	2	8	6
0317 Fund. of Math	5	0	5
0725 Occ. Orientation	1	2	2
6901 Wldg for Rel Trades I	2	4	4
	10	14	17

#### THIRD QUARTER

6635 Body/Chassis Align	1	4	3
6636 Coll Damage Rpr	2	8	6
6637 Rel Autom Mech I	2	6	5
1000 Seminar in Occ	1	2	2
	6	20	16

Total Quarter Hours: 49

#### SECOND QUARTER

6616 Autom. Body Wldg	1	8	5
6618 Autom. Paint Shop Practices	1	4	3
0201 Intro to Tech Comm	1	2	2
6624 Autom. Body Shop Practices	2	8	6
	5	22	16

## Automotive Service Technology

The automotive service technician is a highly skilled, well paid, respected specialist whose services are in great demand. He is important to our national economy. As a result of society's great dependence on automotive vehicles for transportation, and because today's autos are highly developed, they must be serviced regularly. Modern living depends upon transportation. The value of the automobile as a dependable means of transportation has long been proven. The passenger car and light delivery truck are being produced in large numbers, and the servicing of new units and those now on the road offer many job opportunities to those who have been trained to enter this type of employment.

Students completing the two-year Automotive Service Technology program will be awarded the degree of Associate in Applied Sciences and those completing the one-year program in Automotive Mechanics will be awarded the technical certificate.

The two-year Automotive Service Technology and the one-year Automotive Mechanics programs are offered at South Bend, Fort Wayne, Indianapolis and Evansville. The one-year Automotive Mechanics program also is offered at Gary, Kokomo, Terre Haute, Richmond and Clarksville.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
✓ 0314 Fund Arith <i>0319</i>	2	0	2
✓ 0725 Occ Orientation	1	2	2
✓ 6604 Autom Fra/Chas Unit	2	8	6
✓ 6607 Autom Eng	2	8	6
	<u>7</u>	<u>18</u>	<u>16</u>

#### SECOND QUARTER

✓ 0450 Mech	3	2	4
✓ 6622 Autom Elect Sys	2	8	6
✓ 6623 Autom Fuels& Fuel&Emission Sys	2	8	6
	<u>7</u>	<u>18</u>	<u>16</u>

#### THIRD QUARTER

✓ 0201 Intro/Tech Comm	1	2	2
✓ 6605 Autom Diag&Tune-up	2	8	6
✓ 6625 Autom Accessories	1	2	2
✓ 6613 Autom Power Trains	2	4	4
✓ 0211 Oral Comm	2	0	2
	<u>8</u>	<u>16</u>	<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
✓ 0202 Tech Comm Skills	1	2	2
✓ 0315 Fund of Algebra <i>0319</i>	3	0	3
✓ 6900 Basic Welding	1	2	2
✓ 6619 Auto Trans Fund	2	2	3
✓ 6663 Intro/Parts Handling	2	0	2
✓ Restricted Elective *	3	0	3
	<u>12</u>	<u>6</u>	<u>15</u>

#### FIFTH QUARTER

✓ 0505 Consumers Ec.	3	0	3
✓ 6001 Tech/Superv I	3	0	3
✓ 6620 Adv Autom Trans	2	8	6
✓ 6610 Autom Air Cond	2	2	3
	<u>10</u>	<u>10</u>	<u>15</u>

#### SIXTH QUARTER

✓ 1000 Seminar in Occ	1	2	2
✓ 6621 Adv Autom Diag/ Tune-up	2	8	6
2293 Fid Proj a/o Case Study	1	arr	6
			<u>14</u>

Total Quarter Hours: 92

\*Restricted Elective: 0750, 0755

### AUTOMOTIVE MECHANICS TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lab	Lec	Cr
0314 Fund Arith	2	0	2
0725 Occ Orientation	1	2	2
6604 Autom Fr/Chas Units	2	8	6
6607 Autom Eng	2	8	6
	<u>7</u>	<u>18</u>	<u>16</u>

#### SECOND QUARTER

0455 Physical Science	3	0	3
6622 Autom Elect Sys	2	8	6
6623 Autom Fuels& Fuel Emission Sys	2	8	6
	<u>7</u>	<u>16</u>	<u>15</u>

#### THIRD QUARTER

	Lec	Lab	Cr
0201 Intro/Tech Comm	1	2	2
6605 Autom Diag/Tune-up	2	8	6
6613 Autom Power Trains	2	4	4
6625 Autom Accessories	1	2	2
Electives, Restricted *		2/3	
		<u>16</u>	
		or	
		<u>17</u>	

Total Quarter Hours: 47 or 48

\*Restricted Electives: 0211 or 0755



## Building Construction

This program deals with light construction, with particular emphasis on practical experience in residential work. It should be very valuable to those who desire to enter the small builders field as contractors or jobbers, after gaining some practical experience.

Instruction is given in wood, concrete and masonry construction. This includes the proper use of tools and woodworking machinery, house framing, use of steel square, millwork, stair building and the hanging of sash and doors. Reinforced concrete construction, farm building, foundations, bricklaying, plastering and roof flashing are also covered in a practical manner. This program is offered at Kokomo.

### HOUSE BUILDING AND CONSTRUCTION TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
6401 Blueprint Reading	1	2	2
0314 Fund Arith	2	0	2
8000 Intro/Tools, Processes & Safety	1	2	2
8001 Fund/Carpentry: Foundation, Layout & Construction	1	6	4
8005 Fund of Plmbg	1	2	2
8101 Int Decorating I	1	2	2
	8	16	16

#### SECOND QUARTER

6426 Blueprint Rdg II	1	2	2
8006 Fund Int Elec Wiring	1	2	2
8002 Fund of Carpentry: Rough Framing	1	6	4
8003 Fund of Carpentry: Ext Finish	1	6	4
8102 Int Dec II	1	2	2
Elective, Related Ed			3
			17

#### THIRD QUARTER

	Lec	Lab	Cr
8110 Est & Bkpg	1	6	4
8004 Fund of Carpentry: Int Trim&Finish	1	6	4
8103 Int Dec III	1	2	2
8007 Fund of Bricklaying	1	4	3
8008 Fund of Conc Mason	1	6	4
			17

#### FOURTH QUARTER

2294 Fld Proj a/o Case Study	1	arr	4
6420 Arch Drawing I	2	6	5
8104 Int Dec IV	1	2	2
Elective, Related Ed			2
1000 Seminar in Occ	1	2	2
			15

Total Quarter Hours: 65

## Diesel Engine Mechanics

Diesel engine mechanics are needed to repair and maintain diesel engines used to power machines, such as buses, trucks, electric generators, and construction machinery. They use handtools, precision-measuring instruments, and metalworking tools. Diesel engine mechanics diagnose trouble, disassemble engines, examine parts for defects and excessive wear, and recondition and replace parts such as pistons, bearings, gears, valves, and bushings. To do this, they need to know how to use engine lathes, boring machines, handtools, and precision-measuring instruments. The graduate of this program may find

employment opportunities as an automotive mechanic, diesel engine mechanic, bus mechanic, marine mechanic, construction mechanic or farm diesel mechanic. This program is offered at Terre Haute and Indianapolis.

### DIESEL ENGINE MECHANICS TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
6655 Fund of Diesel Eng	2	8	6
6900 Basic Welding	1	2	2
0725 Occ Orientation	1	2	2
0314 Fund Arith	2	0	2
0201 Intro/Tech Comm	1	2	2
	<u>7</u>	<u>14</u>	<u>14</u>

#### SECOND QUARTER

6656 Diesel Eng Access	2	8	6
6479 Hydraulics&Pneum.	1	2	2
6810 Basic Mach Tool Proc	2	8	6
0455 Physical Science	3	0	3
	<u>8</u>	<u>18</u>	<u>17</u>

#### THIRD QUARTER

2293 Fld Proj a/o Case Std	1	arr	6
6657 Diesel Eng Trblshtg	2	8	6
Elective, Restricted *			<u>2/3</u>
			<u>14</u>
			or
			<u>15</u>
Total Quarter Hours: 45 or 46			

\*Restricted Electives: 0211 or 0755

### Ground Water Specialist

This program is designed to provide qualified individuals to participate in the critical development and management of our nation's underground water resources. With surface water supplies being repeatedly depleted in quantity and quality, the use of our vast ground water reserves will double and perhaps triple during the coming decade. Trained specialists are needed in the fields of water well construction technology, well and pump maintenance and repair as well as municipal ground water systems operation.

The one-year curriculum leading to the Ground Water Specialist Certificate contains a balanced training in mechanical and electrical theory and practice, water well construction skills and techniques as well as fundamental training in geology, hydrology and water hygiene.

The ground water program has been established in cooperation with the National Water Well Association and leads to eligibility for NWWA certification as well drilling and pump installation specialist. This program is offered at South Bend.

### TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0317 Fund of Math	5	0	5
6479 Hydraulic&Pneum.	1	2	2
7000 Drilling Equip: Op & Maint	3	4	5
7005 Hydrogeo/Well Drill	4	0	4
	<u>14</u>	<u>8</u>	<u>18</u>

#### SECOND QUARTER

6502 Electricity	2	4	4
6608 Int Comb Eng	1	4	3
7010 Pump Theory&Maint	3	2	4
7015 Water Cond Reqmts & Sys	2	0	2
7020 Well Const, Develop. & Maint	4	0	4
	<u>12</u>	<u>10</u>	<u>17</u>

THIRD QUARTER		Lec	Lab	Cr
0201	Intro/Tech Comm	1	2	2
6901	Wldg/Rel Trades I	2	4	4
0755	Human Relations	3	0	3
6905	Rec Keeping&Bus Ec	2	0	2
7025	Fld Drilling, Site Selec, Set-up & Op	2	4	4
7030	San Aspects/Water Well Tech.	2	0	2
		<u>12</u>	<u>10</u>	<u>17</u>

Total Quarter Hours: 52

## Heating and Air Conditioning Technology

The Heating and Air Conditioning Technology program of the College leads to the degree of Associate in Applied Sciences in Heating and Air Conditioning Technology and has a one-year spin-off program leading to a technical certificate in Heating and Air Conditioning.

These curricula are designed to develop the knowledge and skills necessary for employment as a technician or mechanic in industry. The instruction includes both theory and practical work in heating and air conditioning principles and calculations, the study of electrical machinery and related courses necessary to the success of the student in industry.

Graduates of this program will be able to enter fields of sales and service, planning, installing, operating and maintaining all types of heating and air conditioning equipment. Heating and Air Conditioning Technology and Heating and Air Conditioning (Technical Certificate) are offered at Indianapolis, and Heating and Air Conditioning (Technical Certificate) is offered at Kokomo and Muncie.

## ASSOCIATE DEGREE

### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro/Tech Comm	1	2	2
0315 Fund of Algebra	3	0	3
0725 Occ Orientation	1	2	2
6101 Prin/Air Cond&Ref	2	4	4
6502 Electricity	2	4	4
	<u>9</u>	<u>12</u>	<u>15</u>

### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
0319 Tech Algebra I	5	0	5
6102 Heating Principles	4	4	6
6104 Burner Service	2	4	4
	<u>12</u>	<u>10</u>	<u>17</u>

### THIRD QUARTER

0211 Oral Comm	2	0	2
0321 Tech Algebra II	5	0	5
6103 Commercial Ref Sys	2	4	4
6416 Blue Print Rdg, Const	1	4	3
	<u>10</u>	<u>8</u>	<u>14</u>

### FOURTH QUARTER

0329 Tech App Geometry	5	0	5
6105 Sheet Met Feb&Lay	1	4	3
6106 Air Movmt/Vent	4	4	6
	<u>10</u>	<u>8</u>	<u>14</u>

## HEATING AND AIR CONDITIONING TECHNOLOGY

<b>FIFTH QUARTER</b>	Lec	Lab	Cr
0505 Consumer Ec	3	0	3
6110 Adv Heat/Air Cond Problems	3	6	6
6111 Psychometrics/Air Cond Sys	2	0	2
6107 Elec Circ/Cont	2	4	4
	<u>10</u>	<u>10</u>	<u>15</u>

<b>SIXTH QUARTER</b>			
6113 Adv Air Cond Sys Anal.	2	6	5
6112 Adv Comm Ref Sys	2	6	5
0755 Human Relations	3	0	3
Elective, Related Ed			<u>3</u>
			16

Total Quarter Hours: 91

### TECHNICAL CERTIFICATE

<b>FIRST QUARTER</b>	Lec	Lab	Cr
0314 Fund Arith	2	0	2
0725 Occ Orientation	1	2	2
6101 Prin/Air Cond&Ref.	2	4	4
6102 Heating Principles	4	4	6
	<u>9</u>	<u>10</u>	<u>14</u>

<b>THIRD QUARTER</b>			
0211 Oral Comm	2	0	2
6107 Elect Circ&Cont	2	4	4
6114 Heat Sys Trbl Shoot.	1	2	2
6115 Cool. Sys Trbl Shoot.	1	2	2
6116 Duct Design	3	0	3
Elective, Related Ed			<u>3</u>
			16

<b>SECOND QUARTER</b>			
0201 Intro/Tech Comm	1	2	2
6104 Burner Service	2	4	4
6106 Air Movmt/Vent	4	4	6
6502 Electricity	2	4	4
	<u>9</u>	<u>14</u>	<u>16</u>

Total Quarter Hours: 46

### Industrial Electricity

All industrial plants need craftsmen who can service electrical equipment and machinery. A large part of the plant electrician's work is preventive. He periodically inspects equipment to find and repair defects before breakdowns occur. When trouble does develop, he repairs the faulty circuit or equipment so that production can continue. His duties include replacing wiring, fuses, circuit breakers, coils and switches. He also may do minor installation work.

While doing repair or installation work, the plant electrician may connect wires by splicing or by using mechanical connectors. He may measure, cut, bend, thread, and install conduits through which wires are run to outlets, panels and boxes. He also may adjust equipment controls and check and adjust instruments.

The electrician uses such devices as test lamps, ammeters, volt-ohm meters, and oscilloscopes in testing electrical equipment and wiring. He often works from blueprints, wiring diagrams, and other specifications.

In large plants, an electrician may be responsible for the maintenance of a particular type of equipment such as motors or trans-

formers. In a small plant, the plant electrician usually is responsible for all types of electrical repair work. This program leads to a technical certificate in Industrial Electricity and is offered at Richmond and Muncie.

### INDUSTRIAL ELECTRICITY TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0317 Fund of Math *	5	0	5
6505 AD/DC Fund	3	6	6
6415 Elec Blueprints	2	4	4
6545 Elec Shop Processes	1	2	2
	<u>12</u>	<u>14</u>	<u>19</u>

#### THIRD QUARTER

	Lec	Lab	Cr
0211 Oral Comm	2	0	2
1000 Seminar in Occ	1	2	2
6585 Ind Cont Circuits	3	6	6
6510 AC/DC Mach&Cont II	3	6	6
	<u>9</u>	<u>14</u>	<u>16</u>

Total Quarter Hours: 53

#### SECOND QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
6581 Ind & Coml Wiring	3	4	5
6503 AC/DC Mach&Cont I	3	6	6
6504 Elec Maint	3	4	5
	<u>10</u>	<u>16</u>	<u>18</u>

\*or 0314 and 0315

### Machine Tool Repair

The tools and equipment used by industry must be kept in good operating condition, and skilled workers who can maintain and repair these tools are needed throughout the country. The main function of the machine tool repairman is to restore the accuracy to the machine tools. He does this by replacing parts, rebuilding, regrinding and re-scraping.

When a breakdown occurs, the machine tool repairman needs to be able to determine the cause of the trouble, make the necessary repairs, and return the equipment to proper working order. In doing this work, he may completely or partly disassemble a machine before replacing and repairing the defective part. After the machine is put back together, he makes the necessary adjustments to be sure it is working properly.

Some of the repairman's time is spent in preventive maintenance by regularly inspecting the equipment. He prevents trouble which could cause breakdowns later. He also may keep maintenance records of the equipment he serves. In performing his duties, the machine tool repairman uses such handtools as wrenches, screwdrivers and pliers. He uses portable power tools and may use welding equipment in repairing broken metal parts.

Mechanical aptitude and manual dexterity are important qualifications for workers in this trade. This program leads to a technical certificate in Machine Tool Repair and is offered at Richmond.

# MACHINE TOOL REPAIR TECHNICAL CERTIFICATE

## FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0317 Fund of Math	5	0	5
0201 Intro to Tech Comm	1	2	2
6401 Blue Print Read I	1	2	2
6810 Basic Mach Tool Proc	2	8	6
	<u>10</u>	<u>14</u>	<u>17</u>

## THIRD QUARTER

6866 Ind Hydraul&Pneum	2	4	4
6861 Diagnosis & Repair II	2	4	4
1000 Seminar in Occ	1	2	2
6853 Mach Repair II	2	4	4
Elective, Technical			<u>3</u>
			17

Total Quarter Hours: 49

## SECOND QUARTER

0319 Tech Algebra I	5	0	5
6852 Mach Repair I	2	4	4
6860 Diagnosis & Repair I	2	4	4
Elective, Related Ed			<u>2</u>
			15

## Radio and Television Repair

A skilled radio and television repairman uses his technical knowledge of electrical and electronic parts and circuits to install and repair electronic products, mostly television sets and radios. He also may repair other electronic products such as phonographs, hi-fidelity and stereophonic sound equipment, intercommunication equipment, tape recorders, and public address systems.

Most of his work involves diagnosing trouble in the equipment and making the necessary repairs and adjustments. He checks and evaluates each possible cause of trouble, conducts routine checks and may use electronic testing equipment to check suspected circuits. He may measure voltages and use such testing instruments as vacuum tube voltmeters, multimeters, oscilloscopes, signal generators, and other specialized instruments.

Most radio and television technicians work in service shops or for stores which sell and service television receivers, radios and other electronic products. Others are employed by government agencies and manufacturers, including manufacturers who operate their own service branches. This program leads to a technical certificate and is offered at Fort Wayne, Kokomo, Terre Haute and Indianapolis.

# TECHNICAL CERTIFICATE

## FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
6530 Radio and TV I	3	6	6
6505 AC/DC Fund	3	6	6
6542 Electron Shop Proc I	1	4	3
	<u>8</u>	<u>18</u>	<u>17</u>

## SECOND QUARTER

0201 Intro to Tech Comm	1	2	2
6531 Radio and TV II	3	6	6
6514 Vac Tube&Semi-Cond			
Fund	3	6	6
6540 Trouble Shoot Tech I	1	4	3
	<u>8</u>	<u>18</u>	<u>17</u>

## RADIO AND TELEVISION REPAIR

### THIRD QUARTER

	Lec	Lab	Cr
6532 Radio and TV III	3	6	6
6535 Recording Sys	3	6	6
0317 Fund of Math *	5	0	5
	<u>11</u>	<u>12</u>	<u>17</u>

### FOURTH QUARTER

6541 Trouble Shoot			
Tech II	1	4	3
6533 Radio and TV IV	3	6	6
6538 Prof Standards	6	0	6
0211 Oral Comm	2	0	2
1000 Seminar in Occ	1	2	2
	<u>13</u>	<u>12</u>	<u>19</u>

Total Quarter Hours: 70

\*or 0314 and 0315

## Tool Room Machine Operator

The tool room machine operator is a highly skilled craftsman who shapes metal to precise dimensions and tolerances by the use of machine tools and must be familiar with the machining properties of the various metals.

Tool room machine operators are employed mainly in factories that manufacture fabricated metal products, transportation equipment and machinery in large quantities. They may work in production departments, maintenance departments, tool rooms and job shops.

Prospective trainees should be mechanically inclined and suited to highly accurate work that requires concentration as well as physical effort. This program leads to a technical certificate and is offered at Indianapolis and Richmond.

## TECHNICAL CERTIFICATE

### FIRST QUARTER

	Lec	Lab	Cr
0317*Fund of Math	5	0	5
0725 Occ Orientation	1	2	2
0201 Intro to Tech Comm	1	2	2
6413 Blue Print Fund I	1	2	2
6810 Basic Mach Tool Proc	2	8	6
	<u>10</u>	<u>14</u>	<u>17</u>

### THIRD QUARTER

1000 Seminar in Occ	1	2	2
6813 Mach Tool Proc III	2	8	6
6814 Mach Tool Proc IV	2	8	6
0211 Oral Comm	2	0	2
	<u>7</u>	<u>18</u>	<u>16</u>

Total Quarter Hours: 50

\*or 0314 and 0315

### SECOND QUARTER

0455 Physical Science	3	0	3
6417 Blue Print Fund II	1	2	2
6811 Mach Tool Proc I	2	8	6
6812 Mach Tool Proc II	2	8	6
	<u>8</u>	<u>18</u>	<u>17</u>

## Welding

Welding is one of the most common and most dependable methods of joining metal parts. Many parts used in the manufacture of automobiles, missiles and spacecrafts, airplanes, household appliances and thousands of other products are joined by welding.

Structural metal used in the construction of bridges, buildings and storage tanks often is welded. The welding process also is used to repair broken metal parts.

Welders join the metal parts by applying intense heat and sometimes pressure. This melts the edges and allows the formation of a permanent bond. There are more than 35 different ways to weld. Electric Arc, gas and resistance welding are the three most important ways.

The principal duty of the welder is to control the melting by directing the heat from either an electric arc or a gas welding torch and to add filler metal where necessary to complete the joint.

Employment opportunities are available in the fabrication and building trades as well as in small shops doing maintenance work. Industries which need welders include utility companies, light and heavy metal manufacturing concerns, electric motor manufacturers, construction companies, mining concerns, farm and industrial equipment manufacturers, and truck and automobile manufacturers. In fact, almost all manufacturers who use metal need welders.

This program leads to a technical certificate and is offered at Terre Haute, Indianapolis and Evansville.

### TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
8701 Basic Metallurgy	2	2	3
6906 Gas Welding	2	8	6
0317 Fund of Math	5	0	5
	<u>10</u>	<u>12</u>	<u>16</u>

#### SECOND QUARTER

6907 Arc Welding	2	8	6
0455 Physical Science	3	0	3
6401 Blue Print Read I	1	2	2
0201 Intro to Tech Comm	1	2	2
Elective, Related Ed			<u>2</u>
			<u>15</u>

#### THIRD QUARTER

	Lec	Lab	Cr
6908 Adv Welding	2	8	6
6909 Weld Trouble Shoot	2	4	4
2294 Fld Proj a/o Case Stu	1	arr*	4
1000 Seminar in Occ	1	2	2
			<u>16</u>

Total Quarter Hours: 47

\*Minimum 10 clock hours per week



## BUSINESS DIVISION

The primary objective of the programs in the Business Division is to educate students for occupational competence which includes development of business leadership and decision-making ability to be applied to one of the fastest growing areas of employment in our economy.

In our increasingly complex society, business offers outstanding job opportunities for those who have acquired a sound, fundamental knowledge of the field of business. The introduction of sophisticated information-handling systems in modern offices has increased the demand for highly trained office personnel.

The programs offered by the College under the Business Division that lead to the degree of Associate of Applied Sciences are Accounting Technology, Computer Technology, Industrial Management Technology, Marketing Technology (Industrial and Retail Options), and Secretarial with Executive, Legal and Medical Options. The one-year programs offered under the Business Division of the College are Accounting-Clerical, Computer Operator, Library Aide, Marketing-Clerical, Clerical-Stenographic and Clerical-Typist.

The programs are designed to provide the student the necessary education and training which, combined with ambition and initiative, will assist him in advancing to positions of responsibility in the field of business.

### Accounting Technology

The expanding American economy, the increasing size of the business community, the growing complexities of taxation and the enlargement of governmental operations have combined to create a growing demand for both public and private accountants.

Accounting is the language of business and embraces that part of the central function of management which utilizes measurement and communications of data regarding acquisition, disposition, and exhaustion of material and human resources and the efficiency of their utilization. Accounting can and must measure and communicate data, not only in terms of symbols, but also in non-monetary units, such as material, labor and time. Accounting is a means of expressing in clear, understandable financial terms the results of complex operations of business, government and other institutions.

The two-year Accounting Technology curriculum leads to the degree of Associate of Applied Sciences and the one-year Accounting-Clerical program leads to the technical certificate.

The programs prepare students for employment in the public or private accounting field in such positions as junior accountant, accounting clerk, and other related jobs.

The two-year Accounting Technology and the one-year Accounting-Clerical programs are offered at Gary, South Bend, Fort Wayne, Lafayette, Kokomo, Terre Haute, Indianapolis and Columbus. The one-year Accounting-Clerical program is offered at Muncie, Indianapolis, Richmond, Madison and Clarksville.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0337 Math of Finance	5	0	5
0725 Occ Orientation	1	2	2
2124 Office Calc Mach	2	2	3
2201 Acctg I	4	0	4
	<u>13</u>	<u>6</u>	<u>16</u>

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
0505 Consumer Ec	3	0	3
2251 Bus Prin & Org	3	0	3
2101 Typewriting I	2	2	3
2202 Acctg II	4	0	4
	<u>13</u>	<u>4</u>	<u>15</u>

#### THIRD QUARTER

0211 Oral Comm	2	0	2
2306 Intro/DP & Prog	3	4	5
2203 Acctg III	4	0	4
Elective, Restricted*	3	0	3
Elective, Technical			<u>2</u>
			<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
2281 Bus Law I	3	0	3
2204 Acctg IV	4	0	4
2211 Cost Acctg I	4	0	4
Elective			<u>3</u>
			<u>14</u>

#### FIFTH QUARTER

2282 Bus Law II	3	0	3
2205 Acctg V	4	0	4
2212 Cost Acctg II	4	0	4
2222 Income Tax I	3	0	3
	<u>14</u>	<u>0</u>	<u>14</u>

#### SIXTH QUARTER

2153 Office Mgt & Proced	3	0	3
2223 Income Tax II	3	0	3
2293 Fld Proj a/o Case Stu	1	arr	6
Elective			<u>3</u>
			<u>15</u>

Total Quarter Hours: 90

\*Restricted Electives:  
0750, 0755, 0875

### ACCOUNTING CLERICAL TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0337 Math of Finance	5	0	5
0201 Intro to Tech Comm	1	2	2
2124 Office Calc Mach	2	2	3
2201 Acctg I	4	0	4
	<u>13</u>	<u>6</u>	<u>16</u>

#### SECOND QUARTER

0505 Consumer Ec	3	0	3
0211 Oral Comm	2	0	2
2251 Bus Prin & Org	3	0	3
2101 Typewriting I	2	2	3
2202 Acctg II	4	0	4
	<u>14</u>	<u>2</u>	<u>15</u>

#### THIRD QUARTER

2306 Intro /DP & Prog	3	4	5
2281 Bus Law I	3	0	3
2203 Acctg III	4	0	4
2211 Cost Acctg I	4	0	4
	<u>14</u>	<u>4</u>	<u>16</u>

Total Quarter Hours: 47

## Computer Technology

Data processing is a rapidly growing field with rapidly expanding opportunities for employment. Business, industry and science need fast service in the processing of data. Such data provides management with current information on which to base decisions. Well-trained men and women urgently are needed to develop methods for data collection, processing and reporting.

The Computer Technology curriculum is designed to provide an integrated study of the theory and practice of data processing for business, industry and other institutional use.

The curriculum is designed to prepare students for employment as data processing technicians, systems analysts, supervisors and other positions in organizations including wholesale and retail businesses, hospitals, governmental agencies, insurance companies, banks, transportation organizations, public utilities, manufacturing firms, distributors and similar organizations.

The two-year Computer Technology curriculum leads to the degree of Associate of Applied Sciences. The one-year Computer Operator curriculum leads to a technical certificate.

The Computer Technology and Computer Operator programs are offered in Gary, South Bend, Fort Wayne, Kokomo, Muncie, Indianapolis and Columbus. The Computer Operator program is offered at Terre Haute.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
2306 Intro/DP & Prog	3	4	5
2330 Computer Logic	2	0	2
0319 Tech Algebra I	5	0	5
0725 Occ Orientation	1	2	2
0201 Intro to Tech Comm	1	2	2
	<u>12</u>	<u>8</u>	<u>16</u>

#### SECOND QUARTER

2321 Cobol Prog I	3	4	5
2303 H/ware Conc&Cap	4	2	5
2342 Prob Solving Tech	3	0	3
0202 Tech Comm Skills	1	2	2
	<u>11</u>	<u>8</u>	<u>15</u>

#### THIRD QUARTER

2201 Acctg I	4	0	4
0211 Oral Comm	2	0	2
2322 Cobol Prog II	3	4	5
2302 Operating Sys	3	4	5
	<u>12</u>	<u>8</u>	<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
2323 Fortran Prog	3	4	5
2360 Sys Anal & Design I	3	4	5
2251 Bus Prin & Org	3	0	3
0755 Human Relations	3	0	3
	<u>12</u>	<u>8</u>	<u>16</u>

#### FIFTH QUARTER

2343 Bus Prog Application	3	4	5
2345 Rpt Prog Gen (R.P.G.)	2	2	3
0335 Intro to Stat	3	0	3
0505 Consumer Ec	3	0	3
Elective, Related Ed			3
			<u>17</u>

#### SIXTH QUARTER

2341 Data Comm	2	0	2
2293 Fld Proj a/o Case Stu	1	arr	6
Elective, Related Ed			3
Elective, Restricted*			5
			<u>16</u>

Total Quarter Hours: 96

\*Restricted Electives:

2346 PL/I Prog	3	4	5
2347 Assembler Lang Prog	3	4	5

# COMPUTER OPERATOR TECHNICAL CERTIFICATE

## FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
2306 Intro/DP & Prog	3	4	5
0317 Fund of Math	5	0	5
2201 Acctg I	4	0	4
	<u>13</u>	<u>6</u>	<u>16</u>

## THIRD QUARTER

2302 Operating Sys	3	4	5
0202 Tech Comm Skills	1	2	2
0755 Human Relations	3	0	3
2293 Fld Proj a/o Case Stu	1	arr	6
			<u>16</u>

Total Quarter Hours: 49

## SECOND QUARTER

2321 Cobol Prog I	3	4	5
0201 Intro to Tech Comm	1	2	2
2303 H/ware Conc&Cap	4	2	5
2307 Computer Operations	2	6	5
	<u>10</u>	<u>14</u>	<u>17</u>

## Industrial Management Technology

The Industrial Management Technology curriculum is a two-year program leading to the degree of Associate in Applied Sciences. The program prepares students for entry into fields of industrial management and supervision, such as first line supervision, foremanship or top management of small and medium sized firms.

The courses are designed to provide a broad understanding of the principles of supervision and management as well as the opportunity to acquire competence in fundamental methods and techniques for efficient and effective application of these principles. Included in the curriculum is a study of supervision, training techniques, economics, organization and management leadership, with specialized study in materials management, work simplification and labor law.

The program emphasizes problem solving techniques for the development and improvement of managerial talent.

The program also provides an opportunity for persons currently employed in the various categories of management to further develop basic and well-rounded educational experiences to support their job experience.

Graduates of the Industrial Management Technology program may find employment in personnel work, industrial training, safety and first aid, work/simplification, quality control, technical report writing, cost control, production supervision and other related areas. This program is offered at South Bend, Fort Wayne and Indianapolis.

**INDUSTRIAL MANAGEMENT TECHNOLOGY  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0317 Fund of Math	5	0	5
6004 Mfg Org & Mgt	3	0	3
6001 Tech of Supervision I	3	0	3
0725 Occ Orientation	1	2	2
	<u>13</u>	<u>4</u>	<u>15</u>

**SECOND QUARTER**

0202 Tech Comm Skills	1	2	2
2201 Acctg I	4	0	4
6008 Tech of Superv II	3	0	3
6050 Ind Safety & Plt Prot	3	0	3
Elective, Restricted*	3	0	3
	<u>14</u>	<u>2</u>	<u>15</u>

**THIRD QUARTER**

0211 Oral Comm	2	0	2
0505 Consumer Ec	3	0	3
6012 Labor Mgt Relations	3	0	3
6051 Safety Regulations	3	0	3
2202 Acctg II	4	0	4
	<u>15</u>	<u>0</u>	<u>15</u>

**FOURTH QUARTER**

	Lec	Lab	Cr
6020 Qual Control	3	0	3
6034 Motion & Time Stu	4	0	4
6014 Pur & Inv Control	3	0	3
0457 Environmntl Science	3	0	3
Elective, Related Ed	3	0	3
	<u>16</u>	<u>0</u>	<u>16</u>

**FIFTH QUARTER**

6016 Mfg Cost & Val Anal	3	0	3
6018 Prod & Inv Control	3	0	3
6035 Job Anal & Eval	3	0	3
6042 Traffic & Transp Mgt	3	0	3
2211 Cost Acctg I	4	0	4
	<u>16</u>	<u>0</u>	<u>16</u>

**SIXTH QUARTER**

6030 Economics of Ind	3	0	3
6040 Plt Layout & Proc Planning	3	0	3
2293 Fld Proj a/o Case Stu	1	arr	6
0204 Tech Reporting	3	0	3
	<u>    </u>	<u>    </u>	<u>15</u>

Total Quarter Hours: 92

\*Restricted Electives: 0750 & 0755

**Library Aide**

There is a growing need for men and women to support and assist the professional librarian by assuming many technical and clerical responsibilities which are essential to the operation of a modern library. Because employment opportunities are favorable, the library aide may find work in the large urban metropolis or the relatively small community.

The library aide may support or assist the professional librarian in library circulation, referencing, technical processes, audio-visual, children's services, clerical activities and other related activities.

Employment may be found with school, college, university, business and industry, governmental or public libraries as a library aide or assistant. The library aide curriculum is a one-year program leading to a technical certificate and is offered at Clarksville.

## LIBRARY AIDE

### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0201 Intro to Tech Comm	1	2	2
2701 Intro to Libraries	5	0	5
0314 Fund Arith	2	0	2
2101 Typewriting I	2	2	3
	<u>11</u>	<u>6</u>	<u>14</u>

### THIRD QUARTER

	Lec	Lab	Cr
2703 Intro/Lib Pub Svcs	5	0	5
2294 Fld Proj a/o Case Stu	1	arr	4
2152 Office Practice	2	2	3
Elective, Related Ed			<u>3</u>
			15

Total Quarter Hours: 45

### SECOND QUARTER

2702 Intro to Library			
Tech Services	5	0	5
2102 Typewriting II	2	2	3
2293 Fld Proj a/o Case Stu	1	arr	6
Elective, Related Ed			<u>2</u>
			16

## Marketing Technology

(Industrial and Retail Options)

The economy of our country is dependent upon our ability to distribute the goods we produce, and there is an increasing demand for men and women who are prepared to fill mid-management marketing positions.

Industrial marketing technicians may be known as industrial or wholesale salesmen, factory representatives, or service representatives. They work for manufacturers, distributors, service firms, or wholesalers, and are involved in some phase of the movement of goods from factory to consumer.

Their firms may sell hundreds of items or only one; the product may be highly technical or nontechnical; they may sell their product to other businesses -- factories, railroads, banks, wholesalers, retailers, hospitals or schools. An industrial salesman represents his firm in an assigned territory. He introduces new products, sells established items, and is of service to his customers.

The volume of retail sales in Indiana has tripled in the past twenty years and has led to an increased need for people trained in retail marketing -- people who do more than just "wait on" customers. A good salesperson is friendly and helpful to the customer and knows how to generate buying excitement and how to display merchandise effectively. He understands the guidelines for successful operation of a business.

Advanced positions in retail marketing call for people who know how to establish sales goals, how to keep inventory in balance with demand, and how to hire and train employees.

The graduate of this program may find entry level employment as a management trainee, sales supervisor, sales trainer, manufacturers representative or in the area of advertising display, sales promotion, credit, market research, technical writing, purchasing, or customer service.

The two-year Marketing Technology program, with industrial and retail options, leads to the degree of Associate of Applied Science, and the one-year Marketing-Clerk program leads to the technical certificate. Both programs are offered at South Bend. The one-year program is offered at Muncie.

**MARKETING TECHNOLOGY  
(INDUSTRIAL OPTION)  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
3005 Prin of Retailing	3	0	3
0337 Math of Finance	5	0	5
0725 Occ Orientation	1	2	2
3440 Marketing I	4	0	4
0201 Intro to Tech Comm	1	2	2
	<u>14</u>	<u>4</u>	<u>16</u>

**SECOND QUARTER**

3441 Marketing II	4	0	4
2201 Acctg I	4	0	4
3025 Salesmanship I	3	0	3
0202 Tech Comm Skills	1	2	2
2101 Typewriting I	2	2	3
	<u>14</u>	<u>4</u>	<u>16</u>

**THIRD QUARTER**

3442 Marketing III	4	0	4
0211 Oral Comm	2	0	2
3026 Salesmanship II	3	0	3
0755 Human Relations	3	0	3
3101 Prin of Adv & Display	3	0	3
	<u>15</u>	<u>0</u>	<u>15</u>

**FOURTH QUARTER**

	Lec	Lab	Cr
2271 Risk & Ins	3	0	3
3050 Prin of Purchasing	3	0	3
3020 Cred Procedures	3	0	3
0750 Psychology or			
0875 Social Problems	3	0	3
0203 Business Comm	3	0	3
	<u>15</u>	<u>0</u>	<u>15</u>

**FIFTH QUARTER**

2281 Business Law I	3	0	3
6001 Tech of Superv I	3	0	3
3007 Prin of Wholesaling	3	0	3
2301 Intro to DP	2	2	3
0505 Consumer Ec	3	0	3
	<u>14</u>	<u>2</u>	<u>15</u>

**SIXTH QUARTER**

2293 Fld Proj a/o Case Stu	1	arr	6
1000 Seminar in Occ	1	2	2
6012 Labor Mgt Relations	3	0	3
Elective, Related Ed			3
			<u>14</u>

Total Quarter Hours: 91

**(RETAIL OPTION)  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
3005 Prin of Retailing	3	0	3
0337 Math of Finance	5	0	5
0725 Occ Orientation	1	2	2
3440 Marketing I	4	0	4
0201 Intro to Tech Comm	1	2	2
	<u>14</u>	<u>4</u>	<u>16</u>

**SECOND QUARTER**

3441 Marketing II	4	0	4
2201 Acctg I	4	0	4
3025 Salesmanship I	3	0	3
0202 Tech Comm Skills	1	2	2
2124 Office Calc Mach	2	2	3
	<u>14</u>	<u>4</u>	<u>16</u>

## MARKETING TECHNOLOGY

### RETAIL OPTION

THIRD QUARTER	Lec	Lab	Cr
3442 Marketing III	4	0	4
0211 Oral Comm	2	0	2
3026 Salesmanship II	3	0	3
0755 Human Relations	3	0	3
3101 Prin of Adv & Display	3	0	3
	<u>15</u>	<u>0</u>	<u>15</u>

#### FOURTH QUARTER

2271 Risk & Insurance	3	0	3
3019 Merchandise Buying	3	0	3
3020 Cred Procedures	3	0	3
0750 Psychology or			
0875 Social Problems	3	0	3
0203 Business Comm	3	0	3
	<u>15</u>	<u>0</u>	<u>15</u>

#### FIFTH QUARTER

2281 Business Law I	3	0	3
6001 Tech of Superv I	3	0	3
3007 Prin of Wholesaling	3	0	3
2301 Intro to DP	2	2	3
0505 Consumer Ec	3	0	3
	<u>14</u>	<u>2</u>	<u>15</u>

#### SIXTH QUARTER

2293 Fld Proj a/o Case Stu	1	arr	6
1000 Seminar in Occ	1	2	2
6012 Labor Mgt Relations	3	0	3
3015 Small Store Mgt	3	0	3
Elective, Related Ed			<u>3</u>
			17

Total Quarter Hours: 94

## MARKETING CLERICAL TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0201 Intro to Tech Comm	1	2	2
3005 Prin of Retailing	3	0	3
3025 Salesmanship I	3	0	3
3440 Marketing I	4	0	4
0314 Fund of Arith	2	0	2
	<u>14</u>	<u>2</u>	<u>16</u>

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
2201 Acctg I	4	0	4
3026 Salesmanship II	3	0	3
3441 Marketing II	4	0	4
0505 Consumer Ec	3	0	3
	<u>15</u>	<u>2</u>	<u>16</u>

#### THIRD QUARTER

	Lec	Lab	Cr
2301 Intro to DP	2	2	3
0211 Oral Comm	2	0	2
3101 Prin of Adv & Display	3	0	3
3442 Marketing III	4	0	4
Elective, Technical	—	—	<u>4</u>
			16

Total Quarter Hours: 48



## Secretarial Science

Few business or industrial enterprises can function effectively without an adequately trained staff of secretarial and clerical assistants.

With more people seeking office employment and with the growing demand for personnel with advanced education and training, secretarial aspirants today need to be concerned with the acquisition of education beyond high school.

Employers expect more than mere demonstration of acquired proficiencies in shorthand, typewriting and filing. They seek thoroughly trained employees who have developed initiative, who are capable of assuming responsibility and authority, and who have poise and a wide background of interests essential for advancement.

The Secretarial Science curriculum provides students with the education and training which will enable them to achieve the level of competence demanded in business, industry, government and similar institutions.

Students desiring to prepare for a more specialized area, such as the two-year Executive, Legal or Medical fields, may earn the degree of Associate in Applied Sciences in the respective area. Students desiring a one-year program may elect to pursue the Clerical-Stenographic or Clerical-Typist program which leads to a technical certificate.

The two-year Secretarial-Executive program is offered at South Bend, Fort Wayne, Lafayette, Kokomo and Columbus. The two-year Secretarial-Legal program is offered at Lafayette, Kokomo, Terre Haute and Columbus. The two-year Secretarial-Medical program is offered at Lafayette, Kokomo and Columbus.

The one-year Clerical-Stenographic program is offered at South Bend, Fort Wayne, Lafayette, Kokomo, Muncie, Terre Haute, Indianapolis, Richmond, Columbus, Madison, Evansville and Clarksville. The one-year Clerical-Typist program is offered at Muncie.

### SECRETARIAL – EXECUTIVE ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0314 Fund Arith	2	0	2
2101 Typewriting I	2	2	3
2141 Shorthand I	1	4	3
2201 Accounting I	4	0	4
0725 Occ Orientation	1	2	2
	11	10	16

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
2102 Typewriting II	2	2	3
2142 Shorthand II	1	4	3
2124 Office Calc Mach	2	2	3
0337 Math of Finance	5	0	5
	11	10	16

THIRD QUARTER			
	Lec	Lab	Cr
2143 Shorthand III	1	4	3
2135 Prod Typewriting	2	2	3
2301 Intro to DP	2	2	3
0755 Human Relations	3	0	3
2152 Office Practice	2	2	3
	<u>10</u>	<u>10</u>	<u>15</u>

#### FOURTH QUARTER

2144 Shorthand IV	1	4	3
2281 Business Law I	3	0	3
0211 Oral Comm	2	0	2
2104 Exec Typewriting	2	2	3
Business Elective	3	0	3
Elective, Related Ed			3
			<u>17</u>

FIFTH QUARTER			
2251 Bus Prin & Org	3	0	3
0505 Consumer Ec	3	0	3
2137 Tech Dict&Transc I	1	4	3
Business Elective			3/4
Elective, Related Ed			3
			<u>15</u>
			or
			16

SIXTH QUARTER			
2294 Fld Proj a/o Case Stu	1	arr	4
2138 Tech Dict&Transc II	1	4	3
2153 Office Mgt & Proced	3	0	3
Elective, Related Ed			3
			<u>13</u>

Total Quarter Hours: 92  
or  
93

### SECRETARIAL – LEGAL ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0314 Fund Arith	2	0	2
2101 Typewriting I	2	2	3
2141 Shorthand I	1	4	3
2201 Accounting I	4	0	4
0725 Occ Orientation	1	2	2
	<u>11</u>	<u>10</u>	<u>16</u>

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
2102 Typewriting II	2	2	3
2142 Shorthand II	1	4	3
2124 Office Calc Mach	2	2	3
0337 Math of Finance	5	0	5
	<u>11</u>	<u>10</u>	<u>16</u>

#### THIRD QUARTER

2143 Shorthand III	1	4	3
2135 Prod Typewriting	2	2	3
2301 Intro to DP	2	2	3
0755 Human Relations	3	0	3
2152 Office Practice	2	2	3
	<u>10</u>	<u>10</u>	<u>15</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
2281 Business Law I	3	0	3
0211 Oral Comm	2	0	2
0505 Consumer Ec	3	0	3
2144 Shorthand IV	1	4	3
2106 Legal Typewriting	2	2	3
Elective, Related Ed			3
			<u>17</u>

#### FIFTH QUARTER

2251 Bus Prin & Org	3	0	3
2139 Legal Dict & Transc I	1	4	3
2282 Business Law II	3	0	3
Elective, Related Ed			3
Business Elective			3
			<u>15</u>

#### SIXTH QUARTER

2294 Fld Proj a/o Case Stu	1	arr	4
2283 Criminal Law	3	0	3
2153 Office Mgt & Proced	3	0	3
2140 Legal Dict & Transc II	1	4	3
			<u>13</u>

Total Quarter Hours: 92

**SECRETARIAL – MEDICAL  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0314 Fund Arith	2	0	2
0725 Occ Orientation	1	2	2
2101 Typewriting I	2	2	3
2141 Shorthand I	1	4	3
2201 Accounting I	4	0	4
	<u>11</u>	<u>10</u>	<u>16</u>

**SECOND QUARTER**

0202 Tech Comm Skills	1	2	2
2102 Typewriting II	2	2	3
2142 Shorthand II	1	4	3
2124 Office Calc Mach	2	2	3
0337 Math of Finance	5	0	5
	<u>11</u>	<u>10</u>	<u>16</u>

**THIRD QUARTER**

2143 Shorthand III	1	4	3
2135 Prod Typewriting	2	2	3
2301 Intro to DP	2	2	3
0755 Human Relations	3	0	3
2152 Office Practice	2	2	3
	<u>10</u>	<u>10</u>	<u>15</u>

**FOURTH QUARTER**

	Lec	Lab	Cr
0211 Oral Comm	2	0	2
4211 Medical Linguistics	2	2	3
2151 Med Filing & Index	2	2	3
2144 Shorthand IV	1	4	3
2105 Med Typewriting	2	2	3
Elective, Related Ed	3	0	3
	<u>12</u>	<u>10</u>	<u>17</u>

**FIFTH QUARTER**

2251 Bus Prin & Org	3	0	3
0505 Consumer Ec	3	0	3
2193 Med Dict & Transc I	1	4	3
Bus Elective			3/4
Elective, Related Ed	3	0	3
	<u>10</u>	<u>4</u>	<u>15</u>
			or 16

**SIXTH QUARTER**

2294 Fld Proj a/o Case Stu	1	arr	4
2194 Med Dict & Transc II	1	4	3
Elective, Restricted*	3	0	3
Elective, Med Science	3	0	3
	<u>—</u>	<u>—</u>	<u>—</u>
			13

Total Quarter Hours: 92  
or  
93

\*Restricted electives: 2153, 2155

**CLERICAL – STENOGRAPHIC  
TECHNICAL CERTIFICATE**

**FIRST QUARTER**

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
2101 Typewriting I	2	2	3
2141 Shorthand I	1	4	3
0725 Occ Orientation	1	2	2
0314 Fund Arith	2	0	2
Elective, Restricted *			4
			<u>16</u>

**SECOND QUARTER**

2102 Typewriting II	2	2	3
2142 Shorthand II	1	4	3
2124 Office Calc Mach	2	2	3
2251 Bus Prin & Org	3	0	3
Elective, Restricted **			2
			<u>14</u>

**THIRD QUARTER**

	Lec	Lab	Cr
2143 Shorthand III	1	4	3
2135 Prod Typewriting	2	2	3
2301 Intro to DP	2	2	3
2152 Office Practice	2	2	3
Elective, Restricted***			3
			<u>15</u>

Total Quarter Hours: 45

\*Restricted Elective:

2350 Key Punch	2	4	4
2201 Accounting I	4	0	4

\*\*Restricted Elective:

0202 Tech Comm Skills	1	2	2
0211 Oral Comm	2	0	2

\*\*\*Restricted Elective:

0750 Psychology	3	0	3
0755 Human Relations	3	0	3
0875 Social Problems	3	0	3

## LIFE SCIENCES DIVISION

The need for health services is increasing and is reflected as an area of national priority. Well-prepared men and women may find rewarding careers in one of the many health occupations programs offered by the College.

The following programs are offered under the Life Sciences Division of the College: Inhalation Therapy Technician, Medical Assistant, Medical Laboratory Technician, Operating Room Technician, Practical Nursing, Pre-School Education Technology, Radiologic Technology and Social Service Technology.



**Ivy Tech Graduate Lana Kibbe Assists In Surgery At Community Hospital, Indianapolis**

## Inhalation Therapy Technician

Inhalation therapy is one of the newest allied health specialties. It is the treatment, management and care of patients who have a deficient or abnormal respiratory condition.

It involves the therapeutic use of medical gasses, air and oxygen administering apparatus, environmental control systems, humidification and aerosols, drugs, and medications, ventilatory control, postural drainage, chest physio-therapy and breathing exercises, respiratory rehabilitation, assistance with cardiopulmonary resuscitation, and the maintenance of natural, artificial and mechanical airways.

The technician works under competent medical supervision but must be able to make fundamental and sound judgments about the application of specific procedures for individual patients. It is essential for the technician to understand, maintain and care for complex pulmonary and respiratory equipment.

There is an urgent need for inhalation therapy technicians to work with physicians and nurses as a team to help patients with respiratory disease. Hospitals employ the greatest number of inhalation therapy personnel, but employment opportunities are increasing at medical clinics and in physicians' offices.

This is a one-year program leading to the technical certificate and is offered at Lafayette.

### TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
4203 Integ Basic Science I	4	0	4
4901 Inhal Ther Devices I	4	4	6
0201 Intro to Tech Comm	1	2	2
	10	8	14

#### SECOND QUARTER

4902 Inhal Ther Devices II	4	4	6
4220 Med Ethic&Pers Hlth	2	0	2
4204 Integ Basic Science II	4	0	4
4910 Nurs Tech/Inhal Ther	2	2	3
	12	6	15

#### THIRD QUARTER

	Lec	Lab	Cr
4912 Inhal Ther Appl	5	0	5
4913 Inhal Ther Appl Lab	0	20	5
0317 Fund of Math	5	0	5
	10	20	15

#### FOURTH QUARTER

4916 Laboratory Data	2	2	3
4914 Clin Exp	0	25	6
0755 Human Relations	3	0	3
	5	27	12

Total Quarter Hours: 56

## Medical Assistant

The Medical Assistant program is designed to offer an educational opportunity for individuals to develop the skills needed for employment as a medical assistant in a physician's office, clinic or health care agency. Courses are offered in anatomy, physiology, medical assisting techniques, and other related technical areas. Clinical experience is designed to offer the opportunity for practical applications of the educational courses.

The two-year Medical Assistant program leads to the degree of Associate in Applied Sciences, and the one-year Medical Assistant, certificate program, leads to the technical certificate. Both programs are offered at Gary, South Bend, Lafayette, Terre Haute and Indianapolis. The Medical Assistant, certificate program, is offered at Madison.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
4203 Integ Basic Science I	4	0	4
4220 Med Ethic/Pers Hlth	2	0	2
0725 Occ Orientation	1	2	2
4820 Med Office Pro- cedures - Clin I	4	4	6
2150 Med Office Bkpg	3	0	3
	<u>14</u>	<u>6</u>	<u>17</u>

#### SECOND QUARTER

4853 Med Office Pro- cedures - Admin	3	2	4
0201 Intro to Tech Comm	1	2	2
2101 Typewriting I	2	2	3
4204 Integ Basic Science II	4	0	4
0755 Human Relations	3	0	3
	<u>13</u>	<u>6</u>	<u>16</u>

#### THIRD QUARTER

4840 Med Asst Lab Tech	2	4	4
4850 Med Asst Clin Exp I	0	16	4
0314 Fund Arith	2	0	2
0203 Bus Comm	3	0	3
2101 Typewriting II	2	2	3
	<u>9</u>	<u>22</u>	<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
0202 Tech Comm Skills	1	2	2
2151 Med Filing&Index	2	2	3
0211 Oral Comm	2	0	2
0315 Fund of Algebra	3	0	3
2135 Prod Typewriting	2	2	3
	<u>10</u>	<u>6</u>	<u>13</u>

#### FIFTH QUARTER

2105 Med Typewriting	2	2	3
2155 Med Office Mgt&Ins	3	0	3
4821 Med Office Pro- cedures - Clin II	3	4	5
0750 Psychology	3	0	3
	<u>11</u>	<u>6</u>	<u>14</u>

#### SIXTH QUARTER

4808 Med Law & Ec	3	0	3
2301 Intro to DP	2	2	3
0875 Social Problems	3	0	3
2149 Mach Transcrip-Med	1	4	3
Elective, Restricted*	—	—	2/3
			<u>14</u>
			or
			<u>15</u>

Total Quarter Hours: 90  
or  
91

\*Elective, Restricted: 0505, 0850

# MEDICAL ASSISTANT, CERTIFICATE TECHNICAL CERTIFICATE

## FIRST QUARTER

		Lec	Lab	Cr
4203	Integ Basic Science I	4	0	4
✓ 4220	Med Eth&Pers Hlth	2	0	2
✦ 0725	Occ Orientation	1	2	2
✦ 4820	Med Office Pro- cedures - Clin 1	4	4	6
2150	Med Office Bkpgg	3	0	3
		14	6	17

## THIRD QUARTER

		Lec	Lab	Cr
4840	Med Asst Lab Tech	2	4	4
4850	Med Asst Clin Exp 1	0	16	4
0314	Fund Arith	2	0	2
0203	Bus Comm	3	0	3
2102	Typewriting II	2	2	3
		9	22	16

Total Quarter Hours: 49

## SECOND QUARTER

✦ 4853	Med Office Pro- cedures - Admin	3	2	4
✦ 0201	Intro to Tech Comm	1	2	2
2101	Typewriting I	2	2	3
✦ 4204	Integ Basic Science II	4	0	4
0755	Human Relations	3	0	3
		13	6	16

## Medical Laboratory Technician

The Medical Laboratory Technician program provides qualified men and women with an opportunity to become prepared as safe and reliable functioning members of the laboratory team, specifically to perform routine laboratory tests under supervision.

The one-year program encompasses a balance of theory, laboratory practice and clinic application. Standards for the laboratory assistant program have been established by the Committee on Certified Laboratory Assistants, approved by the Council on Medical Education of the American Medical Association. Students who satisfactorily complete the prescribed studies are eligible in the first year and are expected to take the certified laboratory assistants' national examination. A satisfactory score on this examination entitles the graduate to use the title "Certified Laboratory Assistant" (CLA) after his name.

The second year of the curriculum offers advanced clinical techniques and general education. The two-year program leads to the degree of Associate in Applied Sciences and is offered at South Bend, Lafayette, Indianapolis and Richmond.

# MEDICAL LABORATORY TECHNICIAN ASSOCIATE DEGREE

## FIRST QUARTER

	Lec	Lab	Cr
4203 Integ Basic Science I	4	0	4
0440 Chemistry I	3	2	4
0319 Tech Algebra I	5	0	5
0201 Intro to Tech Comm	1	2	2
0725 Occ Orientation	1	2	2
	<u>14</u>	<u>6</u>	<u>17</u>

## SECOND QUARTER

4204 Integ Basic Science II	4	0	4
0202 Tech Comm Skills	1	2	2
4220 Med Ethic&Pers Hlth	2	0	2
4310 Fund of Lab Tech	1	6	4
0335 Intro to Stat	3	0	3
	<u>11</u>	<u>8</u>	<u>15</u>

## THIRD QUARTER

4403 Clin Hema Tech	arr	arr	3
4411 Clin Blood Bank			
Tech	arr	arr	2
4409 Clin Serology Tech	arr	arr	1
0211 Oral Comm	2	0	2
0755 Human Relations	3	0	3
0750 Psychology	3	0	3
	<u>      </u>	<u>      </u>	<u>14</u>

## FOURTH QUARTER

	Lec	Lab	Cr
4405 Clin Bact Tech	arr	arr	2
4407 Clin Chem Tech	arr	arr	3
4401 Clin Routine Anal			
Tech	arr	arr	1
0505 Consumer Ec	3	0	3
4227 Physiology	3	0	3
	<u>      </u>	<u>      </u>	<u>12</u>

## FIFTH QUARTER

4414 Techniques I	arr	arr	6
4228 Instrumentation	3	2	4
4229 General Pathology	3	0	3
	<u>      </u>	<u>      </u>	<u>13</u>

## SIXTH QUARTER

4415 Techniques II	arr	arr	6
4416 Applications I	arr	arr	6
4550 Prin of Biochem	3	2	4
	<u>      </u>	<u>      </u>	<u>16</u>

## SEVENTH QUARTER

4417 Applications II	arr	arr	6
Elective			3
Elective, Related Ed			3
	<u>      </u>	<u>      </u>	<u>12</u>

Total Quarter Hours: 99

## Operating Room Technician

Somewhat new in the field of medicine is the Operating Room Technician (ORT). The ORT works under the supervision of a registered nurse in the operating room as a vital member of the surgical team. The ORT assists the physician by selecting and preparing instruments for surgery, preparing patients for surgery, passing sterile instruments to the surgeon, and cleaning and maintaining equipment.

There is an urgent need for operating room technicians to work in hospital operating rooms, trauma centers and delivery rooms. The work offers a fairly flexible schedule as ORT's are needed around the clock.

The ORT prbgram is approved by the American Association of Operating Room Nurses and the American College of Surgeons, Indiana Chapter, and is operated according to their standards.

Graduates of the program are qualified for the national examination for Operating Room Technicians. This is a one-year program leading to the technical certificate and is offered at Gary, South Bend, Lafayette and Indianapolis.



# **OPERATING ROOM TECHNICIAN TECHNICAL CERTIFICATE**

## **FIRST QUARTER**

	Lec	Lab	Cr
4736 Surg Anatomy I	5	0	5
4220 Med Ethic&Pers Hlth	2	0	2
4710 Op Room Tech I	5	0	5
0725 Occ Orientation	1	2	2
Elective, Restricted*			3
			<u>17</u>

## **SECOND QUARTER**

4737 Surg Anatomy II	3	0	3
4720 Surg Procedures I	5	0	5
4730 Clin Applications I	0	arr	3
4711 Op Room Tech II	3	arr	4
Elective, Restricted*			2
			<u>17</u>

## **THIRD QUARTER**

4721 Surg Procedures II	5	0	5
4731 Clin Applications II	0	arr	7
			<u>12</u>

## **FOURTH QUARTER**

4732 Clin Applications III	0	arr	7
Elective, Related Ed			
Restricted**			5
			<u>12</u>

Total Quarter Hours: 58

*Elective, Restricted:	Lec	Lab	Cr
4210 Med Terminology	2	0	2
4738 Obstetrics	3	0	3
4741 Microbiol for ORT	2	0	2
4739 Emergency Rm Tech	2	0	2

** Elective, Related Ed Restricted:	Lec	Lab	Cr
0755 Human Relations	3	0	3
0750 Psychology	3	0	3
0201 Intro to Tech Comm	1	2	2
0211 Oral Comm	2	0	2
0314 Fund Arith	2	0	2

## **Practical Nursing**

Practical nurses are needed to help care for medical and surgical patients, convalescents, handicapped people, and others who are ill. They work under the direction of physicians and professional nurses and perform a service vital to the people in a community.

In a hospital, a licensed practical nurse (LPN) works with other medical personnel as a member of the nursing team. Her duties in providing bedside care include taking and recording temperatures and blood pressures, changing dressings, administering certain prescribed medicines, bathing the patient, and helping in other ways.

Opportunities for employment may be found in hospitals, nursing homes, clinics, physicians' offices, sanitariums, long-term health-care facilities, public health agencies, and welfare and religious organizations.

The Practical Nursing program is designed to meet the requirements of the Indiana State Board of Nurses' Registration and Education and to prepare the candidate for licensure as a practical nurse in the state of Indiana. This one-year program offers courses of studies in anatomy and physiology, nursing, skills, conditions of illness, nutrition, and personal and community health. The student is expected to achieve satisfactory performance levels, as determined by the practical nursing department, in both the theoretical and clinical areas of the program.

This program is offered at Gary, South Bend, Lafayette, Terre Haute and Columbus.

# **PRACTICAL NURSING TECHNICAL CERTIFICATE**

## **FIRST QUARTER**

		Lec	Lab	Cr
4205	Basic Science/P N I	4	0	4
4206	Basic Science/P N II	4	0	4
4218	Pers&Vocational Rel	2	0	2
4510	Nurs Tech&Care I	arr	arr	6
4520	Nutrition	2	0	2
				<hr/>
				18

## **SECOND QUARTER**

4511	Nurs Tech & Care II	arr	arr	4
4530	Med-Surg Nurs I	6	0	6
4550	Pract Nurs Clin Exp I	arr	arr	5
				<hr/>
				15

## **THIRD QUARTER**

		Lec	Lab	Cr
4531	Med-Surg Nurs II	5	0	5
4551	Pract Nurs Clin Exp II	arr	arr	6
0600	Pers & Community Health	2	0	2
				<hr/>
				13

## **FOURTH QUARTER**

4560	Mater Child Health	5	0	5
4552	Pract Nurs Clin Exp III	arr	arr	6
1000	Seminar in Occ	1	2	2
				<hr/>
				13

Total Quarter Hours: 59

## **Pre-School Education Technology**

The student acquires knowledge of child behavior, the needs and characteristics of children, techniques of child supervision, use and care of play equipment, basic child routines and creative play activities suitable for young children. Supervised practice is gained through on-the-job training assignments in licensed day care centers.

The graduate will be prepared to serve as an assistant teacher or to take charge of small groups under the supervision of a master teacher in day care centers, nursery schools, kindergartens, day nurseries, and programs for culturally disadvantaged young children. The student studies all phases of early childhood development, handling groups of young children and parent-child interrelationships. Through observation and practice, the student develops techniques in such activities as music, art, storytelling and language development. During field experiences, the student progresses from observation to supervised student/assistant teaching and observes and becomes part of parent groups.

Staff and teaching opportunities may be available in private cooperative nursery schools, day care centers, neighborhood centers, or as counselors in children's homes and institutions for exceptional children. This two-year program leads to the Associate Degree and is offered at Gary.

## **ASSOCIATE DEGREE**

### **FIRST QUARTER**

		Lec	Lab	Cr
0725	Occ Orientation	1	2	2
0317	Fund of Math	5	0	5
0201	Intro to Tech Comm	1	2	2
1501	Group Care/Children	3	0	3
	Elective, Restricted *			3
				<hr/>
				15

### **SECOND QUARTER**

0202	Tech Comm Skills	1	2	2
2284	Basic Conc/Soc Svc	3	0	3
1511	Rec/Creative Activ I	2	4	4
	Elective, Restricted *			6
				<hr/>
				15

## PRE-SCHOOL EDUCATION TECHNOLOGY

### THIRD QUARTER

0211 Oral Comm	2	0	2
2201 Accounting I	4	0	4
1502 Child Develop I	3	2	4
1513 Rec/Creative Activ II	2	4	4
Elective, Restricted *			3
			<hr/> 17

### FIFTH QUARTER

1514 Child Care, Hlth/Nutr	3	0	3
1515 Pre-School Music	2	2	3
1522 Safety/Fire Prevent	2	0	2
0203 Business Comm	3	0	3
2285 Soc /Res Community	2	2	3
			<hr/> 14

### FOURTH QUARTER

1503 Child Develop II	3	2	4
1510 Lang Arts/Children	3	0	3
1512 Pre-School Art	2	2	3
0204 Tech Reporting	3	0	3
1516 Aud-Vis Mat'l/Meth	1	4	3
			<hr/> 16

### SIXTH QUARTER

1530 Menu Plan/Pre-Sch Children	2	0	2
2293 Fld Proj a/o Case Stu	1	arr	6
1000 Seminar in Occ	1	2	2
2251 Bus Prin/Org	3	0	3
			<hr/> 13

Total Quarter Hours: 90

\* Elective, Restricted:  
0505, 0875, 0750, 0755

## Radiologic Technologist

Radiologic technology plays a major role in the diagnostic and therapeutic field of medicine. Radiological technologists prepare patients for X-ray, position them and, after determining the proper voltage, current and desired exposure time, operate the controls. They work under the direction of a radiologist.

About a third of the radiologic technologists work in hospitals. Others work in medical laboratories, physicians' and dentists' offices, clinics, public school systems, or for federal and state health agencies.

Other technologists may work in the new field of nuclear medicine in which radioactive isotopes are used for diagnosing and treating diseases. Duties in this field include assisting the radiologist in preparing and administering the prescribed radioisotope and operating special equipment for tracing and measuring radioactivity.

This curriculum introduces the student to the principles of radiologic technique, exposure, therapy, positioning, protection, and ethics and is conducted with clinical practice and supplemental instruction in the accredited hospitals. The College confers a technical degree after an additional program of general studies.

Radiologic Technology is a two-year program offered by the College as a cooperative educational institution affiliated with hospital-approved schools of Radiologic Technology accredited by the American Registry of Radiologic Technologists. This program is offered at Indianapolis.

# **RADIOLOGIC TECHNOLOGY** **ASSOCIATE DEGREE**

## **FIRST QUARTER**

	Lec	Lab	Cr
4220 Med Eth&Pers Hlth	2	0	2
4203 Integ Basic Science I	4	0	4
4010 Radiation Physics I	2	0	2
4020 X-ray Tech	5	0	5
4005 Nurs Pro/X-ray Tech	1	0	1
4029 Orientation/Radiolog Technology	1	0	0
0317 Fund of Math	5	0	5
			<u>19</u>

## **SECOND QUARTER**

4204 Integ Basic Science II	4	0	4
4014 Radiation Physics II	2	0	2
4040 Prin/Radiog Exp I	1	0	1
4050 Radiog Positioning I	1	0	1
4060 Film Critique I	3	0	3
4030 X-ray Clin Prac I	arr	arr	1
			<u>12</u>

## **THIRD QUARTER**

0755 Human Relations	3	0	3
4041 Prin/Radiog Exp II	2	0	2
4051 Radiog Position II	2	0	2
4061 Film Critique II	3	0	3
4031 X-ray Clin Prac II	arr	arr	1
4013 Film Quality	1	0	1
			<u>12</u>

## **FOURTH QUARTER**

4042 Prin/Radiog Exp III	2	0	2
4052 Radiog Position III	2	0	2
0201 Intro to Tech Comm	1	2	2
4062 Film Critique III	3	0	3
4032 X-ray Clin Prac III	arr	arr	1
Elective, Related Ed	2	0	2
			<u>12</u>

## **FIFTH QUARTER**

0202 Tech Comm Skills	1	2	2
4053 Radiog Position IV	2	0	2
4080 Spec Proced I	2	0	2
4095 Dep't Admin I	2	0	2
4063 Film Critique IV	3	0	3
4033 X-ray Clin Prac IV	arr	arr	1
			<u>12</u>

## **SIXTH QUARTER**

0211 Oral Comm	2	0	2
4054 Radiation Ther Pos	2	0	2
4081 Spec Proced II	2	0	2
4096 Dept Admin II	2	0	2
4064 Film Critique V	3	0	3
4034 X-ray Clin Prac V	arr	arr	1
			<u>12</u>

## **SEVENTH QUARTER**

4015 Radiation Therapy	2	0	2
4082 Spec Proced III	2	0	2
4007 Equip Maint	1	0	1
4065 Film Critique VI	3	0	3
4035 X-ray Clin Prac VI	arr	arr	1
Elective, Related Ed	3	0	3
			<u>12</u>

## **EIGHTH QUARTER**

4066 Film Critique VII	3	0	3
4090 Gen Exam Review	2	0	2
4036 X-ray Clin Prac VII	arr	arr	1
Elective, Related Ed			6
			<u>12</u>

Total Quarter Hours: 103

## **Social Service Technology**

The human services field has undergone marked shifts in emphasis during the past decade. The student in the Social Service Technology program acquires knowledge of the varied techniques used in the human services, including growth and development of the person, various community resources, governmental structures as it relates to human services, basic principles of group and societal behavior, and communication skills. Practical work experience in a community service agency under supervision is given as a part of the College program. The student must enjoy and demonstrate empathy for people and must be in good physical and mental health.

Employment opportunities may be found as interviewers for the Department of Public Welfare or as social work aides in public and private school systems, Children's Aid Society, hospitals, nursing homes, public schools, mental hospitals, community action programs, or as community liaison workers in other human services programs. This two-year program leads to the degree of Associate in Applied Sciences and is offered at Gary.

### SOCIAL SERVICE TECHNOLOGY

#### ASSOCIATE DEGREE

##### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0314 Fund Arith	2	0	2
2101 Typewriting I	2	2	3
0725 Occ Orientation	1	2	2
0755 Human Relations	3	0	3
2251 Bus Prin & Org	3	0	3
	<u>12</u>	<u>6</u>	<u>15</u>

##### SECOND QUARTER

2102 Typewriting II	2	2	3
0315 Fund of Algebra	3	0	3
2124 Office Calc Mach	2	2	3
2242 Records Mgt	2	0	2
Elective, Restricted *			2
Elective, Restricted **			3
			<u>16</u>

##### THIRD QUARTER

2135 Prod Typewriting	2	2	3
2201 Accounting I	4	0	4
2301 Intro to DP	2	2	3
2152 Office Practice	2	2	3
Elective, Technical ***			4
			<u>17</u>

##### FOURTH QUARTER

2284 Basic Conc/Soc Svc	3	0	3
2202 Accounting II	4	0	4
0203 Business Comm	3	0	3
Elective, Restricted **			3
			<u>13</u>

##### FIFTH QUARTER

	Lec	Lab	Cr
2281 Business Law I	3	0	3
2286 Urban Govt/Politics	3	0	3
Elective, Restricted **			3
Elective, Related Ed			2
Elective			3
			<u>14</u>

##### SIXTH QUARTER

2293 Fld Proj a/o Case Stu	1	arr	6
2285 Soc Res/Community	2	2	3
0204 Tech Reporting	3	0	3
Elective			3
			<u>15</u>

Total Quarter Hours: 90

\*Restricted Electives:

0202 Tech Comm Skills	1	2	2
0211 Oral Comm	2	0	2

\*\*Restricted Electives:

0750 Psychology	3	0	3
0875 Social Problems	3	0	3
0505 Consumer Ec	3	0	3

\*\*\*Technical Elective:

2350 Key Punch (Is recom)	4	0	4
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## PHYSICAL SCIENCES DIVISION

The Physical Sciences Division of the College is made up of the engineering technologies, physical science, and mathematics offerings of the College. This division is oriented toward interpreting and extending the principles of mathematics and physical sciences to their application to the engineering technologies and other appropriate areas. The Physical Sciences Division services the mathematics and physical science needs of the other divisions of the College.

The two-year programs administered under this division that lead to the degree of Associate in Applied Sciences are Architectural Technology, Electronics Technology (General and Industrial options), Manufacturing Design Technology and Mechanical Engineering Technology.

The one-year programs leading to a technical certificate are Architectural Drafting, Manufacturing Drafting and Mechanical Drafting.

### **Architectural Technology**

The Architectural Technology area is in need of increasing numbers of well-prepared technicians to translate ideas to graphic and written form and to assist in rendering architectural services.

The Architectural Technology program provides basic training in the design and construction principles of buildings. The objective is to train technicians who will work with architects, designers, civil engineers, contractors, skilled craftsmen and building material suppliers, architectural draftsmen, estimators, expeditors, or building material salesmen. With further training and experience, graduates will qualify for positions as engineering assistants, job superintendents, junior structural engineers, field representatives or building inspectors.

The two-year Architectural Technology program leads to the degree of Associate in Applied Sciences and the one-year Architectural Drafting program leads to the technical certificate. Both programs are offered at South Bend, Indianapolis and Columbus.

# ARCHITECTURAL TECHNOLOGY ASSOCIATE DEGREE

## FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0319 Tech Algebra I	5	0	5
0725 Occ Orientation	1	2	2
6420 Arch Drawing I	2	6	5
	<u>9</u>	<u>10</u>	<u>14</u>

## SECOND QUARTER

0202 Tech Comm Skills	1	2	2
0329 Tech Appl Geometry	5	0	5
2306 Intro/DP & Prog	3	4	5
6421 Arch Drawing II	2	6	5
	<u>11</u>	<u>12</u>	<u>17</u>

## THIRD QUARTER

0211 Oral Comm	2	0	2
0325 Tech Trig	3	0	3
6422 Arch Drawing III	2	6	5
6430 Bldg Materials	3	0	3
Electives, Restricted*	—	—	3
			<u>16</u>

## FOURTH QUARTER

0450 Mechanics	3	2	4
6423 Arch Drawing IV	2	6	5
6432 Arch Rendering	1	2	2
6436 Struct Design	3	0	3
	<u>9</u>	<u>10</u>	<u>14</u>

## FIFTH QUARTER

	Lec	Lab	Cr
0451 Heat, Light & Sound	3	2	4
0505 Consumer Ec	3	0	3
6424 Arch Drawing V	2	6	5
6428 Mech & Elec Equip	3	0	3
6437 Contr & Specs	3	0	3
	<u>14</u>	<u>8</u>	<u>18</u>

## SIXTH QUARTER

0755 Human Relations	3	0	3
6425 Arch Drafting	2	6	5
6434 Arch Estimating	1	2	2
6443 Survey & Measuremts	2	4	4
Elective, Restricted*	—	—	3
			<u>17</u>

Total Quarter Hours: 96

\*Restricted Electives:

- 0204 Tech Reporting
- 0750 Psychology
- 0457 Environmental Science
- 0875 Social Problems

# ARCHITECTURAL DRAFTING TECHNICAL CERTIFICATE

## FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0317 Fund of Math	5	0	5
0725 Occ Orientation	1	2	2
6420 Arch Drawing I	2	6	5
	<u>9</u>	<u>10</u>	<u>14</u>

## SECOND QUARTER

0211 Oral Comm	2	0	2
0319 Tech Algebra I	5	0	5
6421 Arch Drawing II	2	6	5
6434 Arch Estimating	1	2	2
	<u>10</u>	<u>8</u>	<u>14</u>

## THIRD QUARTER

	Lec	Lab	Cr
0329 Tech Applied Geom	5	0	5
6422 Arch Drawing III	2	6	5
6425 Arch Drafting	2	6	5
6430 Bldg Materials	3	0	3
	<u>12</u>	<u>12</u>	<u>18</u>

Total Quarter Hours: 46

## Electronics Technology

The field of electronics is vast, and the need for trained men and women to operate, maintain, research, and construct electronic equipment is becoming more critical each year.

The field includes television, radio, radar, sonar, computers, missile and spacecraft guidance and control instruments, and industrial measuring and controlling devices. Electronic technicians work with engineers and scientists and do complex technical work. The graduate will be qualified to enter many different facets of the electronics field.

Employment opportunities in the field of electronics are expanding rapidly. Opportunities can be found in industry, the service trades, utilities companies, electrical contractors, communications, and federal, state and local government agencies.

Two programs in Electronics Technology (General and Industrial Options) lead to the degree of Associate of Applied Science and are offered at South Bend, Fort Wayne, Kokomo, Terre Haute, Indianapolis, Columbus and Evansville.

### GENERAL OPTION ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0319 Tech Algebra I	5	0	5
6404 Elec Drafting Fund	1	4	3
6552 Elec Circ I	4	4	6
	11	10	16

#### SECOND QUARTER

0321 Tech Algebra II	5	0	5
6553 Elec Circ II	4	4	6
0201 Intro to Tech Comm	1	2	2
0451 Heat, Light & Sound	3	2	4
	13	8	17

#### THIRD QUARTER

6528 Semi Cond Devices	3	4	5
0323 Tech Algebra III	5	0	5
6554 Elec Circ III	4	4	6
0202 Tech Comm Skills	1	2	2
	13	10	18

#### FOURTH QUARTER

6523 Dig Prin & Appl I	3	4	5
6555 Elec Circ IV	4	4	6
2301 Intro to DP*	2	2	3
			or
0327 Logic Develop*	5	0	5
0211 Oral Comm	2	0	2
	11 or 14		16
			or
			18

#### FIFTH QUARTER

6524 Dig Prin & Appl II	3	4	5
6556 Elec Circ V	4	4	6
Elective, Related Ed **	3	0	3
Elective, Tech			2
			16

#### SIXTH QUARTER

6557 Elec Circ VI	4	4	6
6525 Integ Basic Circ	3	4	5
0505 Consumer Ec	3	0	3
Elective, Tech			2
			16

Total Quarter Hours: 99 to 101

\*Student enrolled in Logic Develop. (0327) needs only 2-hour Tech Elect. If enrolled in Intro to DP (2301), needs 4-hour Tech Elective.

\*\* Elective, Related Ed Human Relations (0755) or Psychology (0750).



**INDUSTRIAL OPTION  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0319 Tech Algebra I	5	0	5
6404 Elec Drafting Fund	1	4	3
6552 Elec Circuits I	4	4	6
	11	10	16

**SECOND QUARTER**

0321 Tech Algebra II	5	0	5
6553 Elec Circuits II	4	4	6
0201 Intro to Tech Comm	1	2	2
0451 Heat, Light & Sound	3	2	4
	13	8	17

**THIRD QUARTER**

6528 Semi Cond Devices	3	4	5
0323 Tech Algebra III	5	0	5
6554 Elec Circuits III	4	4	6
0202 Tech Comm Skills	1	2	2
	13	10	18

**FOURTH QUARTER**

6523 Dig Prin & Appl I	3	4	5
6516 Ind Elec I	4	4	6
2301 Intro to DP*	2	2	3
			or
0327 Logic Develop*	5	0	5
0211 Oral Comm	2	0	2
	11 or 14		16
			or
			18

**FIFTH QUARTER**

6524 Dig Prin & Appl II	3	4	5
6517 Ind Elec II	4	4	6
Elective, Related Ed **	3	0	3
Elective, Technical	—	—	2
			16

**SIXTH QUARTER**

6518 Ind Elec III	4	4	6
6525 Integ Basic Circ	3	4	5
0505 Consumer Ec	3	0	3
Elective, Tech	—	—	2
			16

Total Quarter Hours: 99 to 101

\*Student enrolled in Logic Develop. (0327) needs only 2-hour Tech Elect. If enrolled in Intro to DP (2301) needs 4-hour Tech Elective.

\*\* Elective, Related Ed  
Human Relations (0755) or  
Psychology (0750).

**Manufacturing Design Technology**

The products of the manufacturing industry range in complexity from a simple plastic toy to an intricate electronic computer and in size from miniature electronic components to gigantic nuclear powered aircraft carriers. Many diverse processes are carried out in manufacturing which must be designed, which protends the need for persons competent in manufacturing design.

Draftsmen working in the manufacturing and design areas produce the working drawings which are used by craftsmen to manufacture a product. The drafting technician does factory layout work, tool and mold design work, tooling layout work, scheduling, purchasing of raw materials, and sometimes is responsible for the complete fabrication of a particular product.

Opportunities for employment may be found with manufacturing firms, construction companies, public utilities, highway and public works departments, colleges, universities and local, state and federal governmental units.

The two-year program leads to the degree of Associate of Applied Sciences and is offered at Fort Wayne, Kokomo, Indianapolis, Richmond, Columbus and Evansville. The one-year program leads to a technical certificate and is offered at the same locations.

### MANUFACTURING DESIGN TECHNOLOGY ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0319 Tech Algebra I	5	0	5
0201 Intro to Tech Comm	1	2	2
6405 Tech Drawing I	2	6	5
0725 Occ Orientation	1	2	2
Elective, Restricted*			3
			<u>17</u>

#### SECOND QUARTER

	Lec	Lab	Cr
0329 Tech Appl Geometry	5	0	5
0202 Tech Comm Skills	1	2	2
2306 Intro /DP & Prog	3	4	5
6406 Tech Drawing II	2	6	5
	<u>11</u>	<u>12</u>	<u>17</u>

#### THIRD QUARTER

	Lec	Lab	Cr
0325 Tech Trig	3	0	3
6407 Tech Drawing III	2	6	5
6496 Basic Machining	1	4	3
6479 Hydraul&Pneum	1	2	2
Elective, Restricted*			3
			<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
0450 Mechanics	3	2	4
6408 Tech Drawing IV	2	6	5
6481 Mfg Processes	3	0	3
0505 Consumer Ec	3	0	3
	<u>11</u>	<u>8</u>	<u>15</u>

#### FIFTH QUARTER

	Lec	Lab	Cr
0451 Heat, Light & Sound	3	2	4
6464 Mechanisms	2	0	2
6435 Mfg Plan & Est	1	2	2
6409 Tech Drawing V	2	6	5
0211 Oral Comm	2	0	2
	<u>10</u>	<u>10</u>	<u>15</u>

#### SIXTH QUARTER

	Lec	Lab	Cr
6498 Numerical Control	2	2	3
6410 Tech Drawing VI	2	6	5
6497 Design Problems	1	4	3
6034 Motion&Time Study	4	0	4
Elective, Restricted			3
			<u>18</u>

Total Quarter Hours: 98

\*Restricted Electives:  
0750, 0875, 0755, 0204

### MANUFACTURING DRAFTING TECHNICAL CERTIFICATE

#### FIRST QUARTER

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
6405 Tech Drawing I	2	6	5
0201 Intro to Tech Comm	1	2	2
0317 Fund of Math	5	0	5
	<u>9</u>	<u>10</u>	<u>14</u>

#### SECOND QUARTER

	Lec	Lab	Cr
6406 Tech Drawing II	2	6	5
6407 Tech Drawing III	2	6	5
0211 Oral Comm	2	0	2
6464 Mechanisms	2	0	2
Elective, Technical			2
			<u>16</u>

#### THIRD QUARTER

	Lec	Lab	Cr
6408 Tech Drawing IV	2	6	5
6481 Mfg Processes	3	0	3
6409 Tech Drawing V	2	6	5
6496 Basic Machining	1	4	3
	<u>8</u>	<u>16</u>	<u>16</u>

Total Quarter Hours: 46

## Mechanical Engineering Technology

Mechanical engineering technicians are needed to assist the engineer in a wide variety of fields, including automotive, diesel and production technologies, tool design and machine design. He may be required to make free-hand sketches and rough layouts of proposed machinery and other equipment and parts. He aids in determining whether a proposed design change in a product is practical and how much the product will cost to produce and may be required to solve design problems such as those involving tolerance, stress, strain, friction and vibration.

The planning and testing of experimental machines and equipment for performance, durability and efficiency provide a large area of work for technicians. In the testing procedure, they record data, make computations, plot graphs, analyze results and write reports. The technician occasionally makes recommendations for design changes to improve performance. The jobs often require skill in the use of test instruments, test equipment and gauges.

The Mechanical Engineering Technology curriculum is a two-year program leading to the degree of Associate of Applied Sciences. The one-year Mechanical Drafting curriculum leads to a technical certificate. Both programs are offered at South Bend and Fort Wayne.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
0319 Tech Algebra I	5	0	5
0725 Occ Orientation	1	2	2
6405 Tech Drawing I	2	6	5
	<u>9</u>	<u>10</u>	<u>14</u>

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
0329 Tech App Geometry	5	0	5
2306 Intro/DP & Prog	3	4	5
6406 Tech Drawing II	2	6	5
	<u>11</u>	<u>12</u>	<u>17</u>

#### THIRD QUARTER

0325 Tech Trig	3	0	3
6407 Tech Drawing III	2	6	5
6479 Hydraul & Pneum	1	2	2
6496 Basic Machining	1	4	3
Elective, Restricted*			3
			<u>16</u>

#### FOURTH QUARTER

	Lec	Lab	Cr
0450 Mechanics	3	2	4
0505 Consumer Ec	3	0	3
6481 Mfg Processes	3	0	3
6505 AC/DC Fund	3	6	6
	<u>12</u>	<u>8</u>	<u>16</u>

#### FIFTH QUARTER

0211 Oral Comm	2	0	2
0451 Heat, Light & Sound	3	2	4
6462 Stat&Str of Matls	5	0	5
6464 Mechanisms	2	0	2
Elective, Restricted*			3
			<u>16</u>

#### SIXTH QUARTER

6034 Motion & Time Stu	4	0	4
6499 Qual Control	5	0	5
6716 Thermodynamics	3	0	3
Elective, Restricted*			3
			<u>15</u>

Total Quarter Hours: 94

\*Restricted Electives:

0750 Psychology	3	0	3
0875 Social Problems	3	0	3
0755 Human Relations	3	0	3
0204 Tech Writing	3	0	3

# MECHANICAL DRAFTING TECHNICAL CERTIFICATE

## FIRST QUARTER

	Lab	Lec	Cr
0201 Intro to Tech Comm	1	2	2
0317 Fund of Math	5	0	5
0725 Occ Orientation	1	2	2
6405 Tech Drawing I	2	6	5
	<u>9</u>	<u>10</u>	<u>14</u>

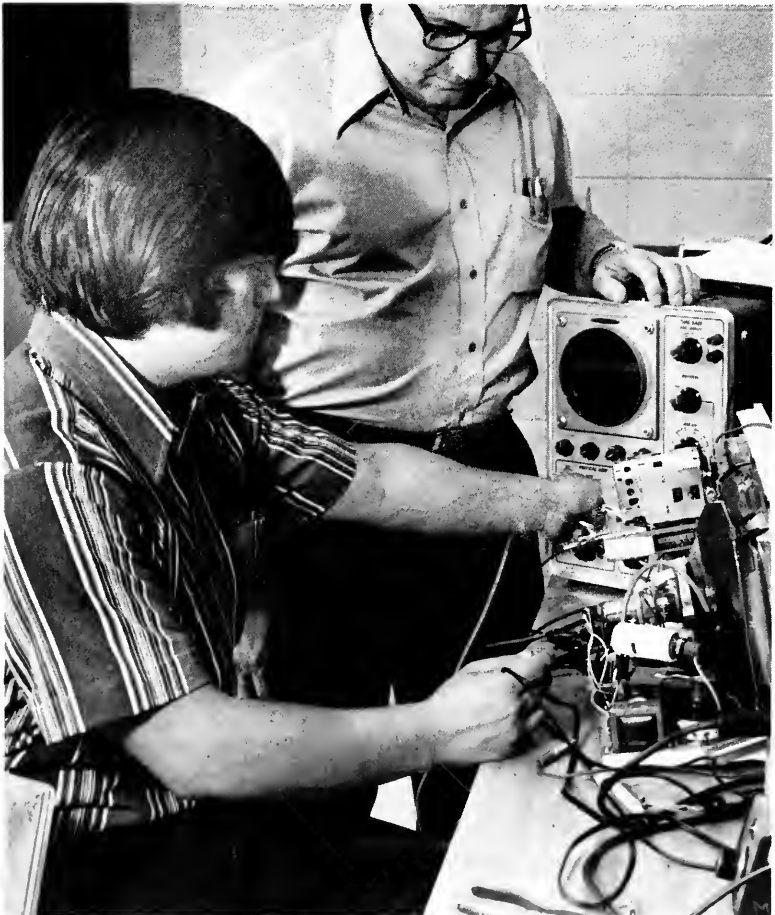
## THIRD QUARTER

	Lab	Lec	Cr
6408 Tech Drawing IV	2	6	5
6409 Tech Drawing V	2	6	5
6481 Mfg Processes	3	0	3
6496 Basic Machining	1	4	3
	<u>8</u>	<u>16</u>	<u>16</u>

## SECOND QUARTER

	Lab	Lec	Cr
0202 Tech Comm Skills	1	2	2
2306 Intro/DP & Prog	3	4	5
6406 Tech Drawing II	2	6	5
6407 Tech Drawing III	2	6	5
	<u>8</u>	<u>18</u>	<u>17</u>

Total Quarter Hours: 47





## PRACTICAL ARTS DIVISION

The Practical Arts Division of the College contains those programs that combine technical knowledge of materials, ingredients, machines, and methods of production with artistic talent to improve appearances, design, usefulness, and general acceptance of a product by the consumer. Generally, a high degree of creative ability, the art and science of communicating, and the ability to anticipate consumer needs are required for success. Natural talent, determination, and willingness to work hard are essential for success.

The two-year curriculums leading to the degree of Associate in Applied Sciences are Commercial Art Technology, Institutional Foods Management, Interior Design Technology, and Graphic Arts Technology. The one-year programs leading to a technical certificate are Institutional Foods Service and Reproduction Printing.

## Commercial Art Technology

The objective of this curriculum is to prepare men and women for employment as commercial artists in many types of businesses. These persons may be employed preparing art designs or illustrations for advertisers; television commercials, cartoons, industrial and advertising films; they may be involved in fashion illustration, package design, wallpaper and textile design, display, poster, brochures and other publications, direct mail advertising and window display for retail department stores. Many such artists are self-employed; others work for manufacturers, department stores, advertising agencies, television stations, sign shops and newspapers.

The commercial artist produces art for commerce, and the need for competent people grows with business and industry. He is an interpreter of ideas and is capable of translating the thought of the client, or a business associate, into a graphic statement.

The commercial artist may be employed by an art agency, an advertising agency, a large industry, a newspaper, department store, sign shop, publishing company, or television station or he may work as a free-lance artist.

Prior art training or experience is desirable, but not necessary, as long as the applicant displays evidence of art ability.

This is a two-year program leading to a degree in Associate of Applied Sciences in Commercial Art. It is offered at South Bend, Columbus and Evansville.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0337 Math of Finance	5	0	5
0725 Occ Orientation	1	2	2
6336 Comp & Design I	1	5	3.5
6341 Basic Drawing I	1	4	3
6322 Intro to Illus I	1	4	3
	<u>9</u>	<u>15</u>	<u>16.5</u>

#### SECOND QUARTER

0201 Intro to Tech Comm	1	2	2
6325 Topography	1	4	3
6305 Science of Art Matls	2	2	3
6347 Photography I	1	4	3
6342 Basic Drawing II	1	4	3
6323 Illus II	1	4	3
	<u>7</u>	<u>20</u>	<u>17</u>

#### THIRD QUARTER

6348 Photography II	1	4	3
6343 Layout Design I	1	4	3
6337 Comp & Design II	1	5	3.5
6326 Illus III	1	5	3.5
6320 Life Drawing I	1	4	3
	<u>5</u>	<u>22</u>	<u>16</u>

#### FOURTH QUARTER

0211 Oral Comm	2	0	2
0750 Psychology	3	0	3
6349 Photography III	1	4	3
6344 Layout Design II	1	5	3.5
6327 Illus IV	1	4	3
6321 Life Drawing II	1	4	3
	<u>9</u>	<u>17</u>	<u>17.5</u>

## COMMERCIAL ART TECHNOLOGY

### FIFTH QUARTER

0505 Consumer Ec	3	0	3
6328 Illus V	1	4	3
0755 Human Relations	3	0	3
6331 Keylining I	1	4	3
6332 TV/Audio Vis Aids Design I	1	5	3.5
	<u>9</u>	<u>13</u>	<u>15.5</u>

### SIXTH QUARTER

2295 Fld Proj a/o Case Stu	1	arr	2
0203 Bus Comm	3	0	3
6334 Keylining II	1	4	3
6333 TV/Audio Vis Aids Design II	1	5	3.5
Elective, Restricted*			3
1000 Seminar in Occ	1	2	2
			<u>16.5</u>

Total Quarter Hours: 99

\*Restricted Electives:  
6367, 6368, 6369

## Institutional Foods Management

Millions of Americans "eat out" every day, and the demand for people trained in culinary arts is many times greater than the supply.

Eating places vary from roadside diners to plush restaurants with exotic atmospheres. Most are independent businesses with fewer than 10 employees.

A manager is responsible for the entire operation of an establishment. He coordinates and directs the work of chefs, cooks, waiters, waitresses, kitchen helpers, and other employees to insure that the food is prepared properly and served promptly. He also makes sure the health and sanitation regulations are observed.

Supervisor positions can be found in dining rooms and cafeterias in schools, colleges, hotels, department stores, factories, hospitals, nursing homes, private clubs, and in public restaurants.

The graduate of this program will be qualified for employment as a chef-manager, food service supervisor, caterer, soups chef, cook, store-keeper, purchasing agent, pastry cook, pastry chef, or manager-trainee.

The two-year program in Institutional Foods Management leads to the degree of Associate in Applied Sciences and is offered at South Bend. The one-year program in Institutional Foods Service leads to a technical certificate and is offered at South Bend.

**INSTITUTIONAL FOODS MANAGEMENT  
ASSOCIATE DEGREE**

**FIRST QUARTER**

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0337 Math of Finance	5	0	5
3572 Intro/Vol Food Prep	1	8	5
3505 Intro/Hotel-Mot Mgt	3	0	3
3573 Intro/Vol Food Svc	1	2	2
	<u>11</u>	<u>12</u>	<u>17</u>

**SECOND QUARTER**

0201 Intro to Tech Comm	1	2	2
3550 Nutrition I	2	0	2
3574 Vol Food Prep	1	8	5
0755 Human Relations	3	0	3
3575 Vol Food Svc	1	2	2
	<u>8</u>	<u>12</u>	<u>14</u>

**THIRD QUARTER**

0750 Psychology	3	0	3
0211 Oral Comm	2	0	2
3576 Food/Bdv Mgt&Svc	3	0	3
3577 Food Prod Prin	2	0	2
3578 Institut Foods Prep	1	8	5
3579 Institut Foods Svc	1	2	2
	<u>12</u>	<u>10</u>	<u>17</u>

**FOURTH QUARTER**

	Lec	Lab	Cr
3581 Food/Bev Purch& Svc	3	0	3
0203 Bus Comm	3	0	3
3506 Motel-Motor Hotel Mgt	2	0	2
3582 Gourmet Food Prep	1	10	6
3583 Gourmet Food Svc	1	2	2
	<u>10</u>	<u>12</u>	<u>16</u>

**FIFTH QUARTER**

0500 Macroeconomics	3	0	3
6001 Tech of Supv I	3	0	3
3584 Gourmet Spec Prep	1	10	6
2201 Acctg I	4	0	4
3585 Gourmet Spec Svc	1	2	2
	<u>12</u>	<u>12</u>	<u>18</u>

**SIXTH QUARTER**

2294 Fld Proj a/o Case Stu	1	arr	4
1000 Seminar in Occ	1	2	2
3588 Gourmet Buffet Prep	1	10	6
2281 Bus Law I	3	0	3
3587 Gourmet Buffet Svc	1	2	2
	<u>7</u>	<u>17</u>	

Total Quarter Hours: 99

**INSTITUTIONAL FOODS SERVICE  
TECHNICAL CERTIFICATE**

**FIRST QUARTER**

	Lec	Lab	Cr
0725 Occ Orientation	1	2	2
0337 Math of Finance	5	0	5
3572 Intro/Vol Food Prep	1	8	5
3505 Intro/Hotel-Mot Mgt	3	0	3
3573 Intro/Vol Food Svc	1	2	2
	<u>11</u>	<u>12</u>	<u>17</u>

**SECOND QUARTER**

0201 Intro to Tech Comm	1	2	2
3550 Nutrition I	2	0	2
3574 Vol Food Prep	1	8	5
0755 Human Relations	3	0	3
3575 Vol Food Svc	1	2	2
	<u>8</u>	<u>12</u>	<u>14</u>

**THIRD QUARTER**

	Lec	Lab	Cr
0750 Psychology	3	0	3
0211 Oral Comm	2	0	2
3576 Food&Bev Mgt&Svc	3	0	3
3577 Food Prod Prin	2	0	2
3578 Inst Foods Prep	1	8	5
3579 Inst Foods Svc	1	2	2
	<u>12</u>	<u>10</u>	<u>17</u>

Total Quarter Hours: 48



## Interior Design Technology

The creative work of interior designers and decorators is being used more and more by a variety of firms and businesses.

Interior design technicians plan the arrangement of interior space and coordinate the selection of furniture, draperies, floor coverings, and interior accessories.

They may work on the interiors of residences, offices, other commercial buildings, ships or aircraft. Some interior design technicians may work on stage sets for motion picture or television studios; they may design furniture and accessories to be used in interiors, and others may redesign interiors of old structures.

The graduate of this program will be trained to work as an interior design assistant or trainee in interior decoration firms, as a sales consultant for furniture stores and home furnishings departments, as a buyer-trainee for home furnishings departments or as a painting and decorating advisor.

Some hotel and restaurant chains have full-time interior design personnel. Interior designers and decorators also are employed by paint and decorating contractors, architects, floor coverings firms, industrial design firms, office furniture stores and textile manufacturers. Both men and women will find rewarding careers in this area.

The two-year program leads to the degree of Associate of Applied Sciences and is offered at Evansville. The one-year program is offered at Madison.

### ASSOCIATE DEGREE

#### FIRST QUARTER

	Lec	Lab	Cr
0201 Intro to Tech Comm	1	2	2
6336 Comp & Design I	1	5	3.5
6374 Color Theory	2	4	4
6307 History of Art I	2	0	2
0337 Math of Finance	5	0	5
0725 Occ Orientation	1	2	2
	12	13	18.5

#### SECOND QUARTER

0202 Tech Comm Skills	1	2	2
6308 History of Art II	2	0	2
6230 Textiles I	2	2	3
6220 Fund/Int Design I	2	2	3
0755 Human Relations	3	0	3
6337 Comp&Design II	1	5	3.5
	11	11	16.5

#### THIRD QUARTER

0211 Oral Comm	2	0	2
6221 Fund/Int Design II	2	2	3
6231 Textiles II	2	2	3
6240 Fund/Struc Design I	2	4	4
6250 Consumer Ed/Int	2	2	3
	10	10	15

#### FOURTH QUARTER

	Lec	Lab	Cr
6260 Furn Selec&Arr I	2	2	3
6241 Fund/Struc Design II	2	4	4
6232 Adv Textiles (Studio Proc)	1	4	3
0750 Psychology	3	0	3
0505 Consumer Ec	3	0	3
	11	10	16

## INTERIOR DESIGN TECHNOLOGY

### FIFTH QUARTER

6270 Appl Int Design I	2	6	5
6280 Display I	3	4	5
6285 Retailing	3	0	3
6261 Furn Sel&Arr II	2	2	3
	<u>10</u>	<u>12</u>	<u>16</u>

### SIXTH QUARTER

6271 Appl Int Design II	2	6	5
6281 Display II	1	4	3
3025 Salesmanship I	3	0	3
1000 Seminar in Occ	1	2	2
Elective, Related Ed	3	0	3
	<u>10</u>	<u>12</u>	<u>16</u>

Total Quarter Hours: 98

## Graphic Arts Technology

Printing is an art, a means of communication, and a leading industry, and the demand for trained printers throughout the country is great.

The complexity and high mechanization of printing equipment today makes training in modern methods and techniques extremely important. Indiana Vocational Technical College has a modern graphic arts laboratory at its Terre Haute campus and offers training in the graphic arts field.

The equipment in this lab includes offset presses, letterpress, Vari-typer, folders, Headliner, stripping tables, plate-making equipment, paper drills, power paper cutter, horizontal camera, and darkroom equipment.

The graphic arts industry provides employment for a great number of people in a wide variety of specialties. Printing craftsmen usually specialize in one area of the printing operation such as type composition, photography, platemaking, presswork, or binding.

This is a two-year program leading to a degree in Applied Sciences in Graphic Arts. A one-year program in Reproduction Printing leads to a technical certificate. Both programs are offered at Terre Haute.

Opportunities for employment are found in printing and publishing plants, government agencies, manufacturers of paper products, and in many large corporations, banks, insurance companies, colleges, and travel organizations which have their own print shops.

### FIRST QUARTER

	Lec	Lab	Cr
6331 Keylining I	1	4	3
6354 Camera/Dk Room			
Line Neg	2	4	4
6325 Typography	1	4	3
0725 Occ Orientation	1	2	2
0314 Fund Arith	2	0	2
	<u>7</u>	<u>14</u>	<u>14</u>

### SECOND QUARTER

6355 Camera&Dark Room			
Half-tones	2	4	4
6356 Typesetting&Comp	1	4	3
0201 Intro to Tech Comm	1	2	2
6357 Stripping, Blk&Wht	1	4	3
0755 Human Relations	3	0	3
	<u>8</u>	<u>14</u>	<u>15</u>

**GRAPHIC ARTS TECHNOLOGY**  
**ASSOCIATE DEGREE**

**THIRD QUARTER**

6359	Platemaking	1	4	3
6358	Stripping, 2/3 Color	1	4	3
6360	Bindery Basics I	2	4	4
0211	Oral Comm	2	0	2
6362	Dup Tech	1	8	5
		<u>7</u>	<u>20</u>	<u>17</u>

**FOURTH QUARTER**

		Lec	Lab	Cr
0203	Bus Comm	3	0	3
0315	Fund of Algebra	3	0	3
6338	Multicolor Plt Mkg	1	4	3
6335	Trblshoot Tech for			
	Graphic Arts	2	2	3
6363	Offset Ltr Presses	2	6	5
		<u>11</u>	<u>12</u>	<u>17</u>

**FIFTH QUARTER**

6361	Bindery	2	4	4
6364	Prod Ltr Press	2	6	5
2101	Typewriting I	2	2	3
6366	Make-Ready&Proof	2	4	4
0202	Tech Comm Skills	1	2	2
		<u>9</u>	<u>18</u>	<u>18</u>

**SIXTH QUARTER**

6314	Printing Estimating	3	0	3
1000	Seminar in Occ	1	2	2
2294	Fld Proj a/o Case Stu	1	arr	4
6365	Prod Offset Press	2	6	5
	Elective, Related Ed	—	—	4
				<u>18</u>

Total Quarter Hours: 99

**REPRODUCTION PRINTING**  
**TECHNICAL CERTIFICATE**

**FIRST QUARTER**

		Lec	Lab	Cr
6331	Keylining I	1	4	3
6354	Camera/Dk Room			
	Line Neg	2	4	4
6325	Typography	1	4	3
0725	Occ Orientation	1	2	2
0314	Fund Arith	2	0	2
		<u>7</u>	<u>14</u>	<u>14</u>

**SECOND QUARTER**

6355	Camera&Dark Room			
	Half-tones	2	4	4
6356	Typesetting&Comp	1	4	3
0201	Intro to Tech Comm	1	2	2
6357	Stripping, Blk&Wht	1	4	3
0755	Human Relations	3	0	3
		<u>8</u>	<u>14</u>	<u>15</u>

**THIRD QUARTER**

		Lec	Lab	Cr
6359	Platemaking	1	4	3
6358	Stripping, 2/3 Color	1	4	3
6360	Bindery Basics I	2	4	4
0211	Oral Comm	2	0	2
6362	Dup Tech	1	8	5
		<u>7</u>	<u>20</u>	<u>17</u>

Total Quarter Hours: 46

## COMMUNITY SERVICES

Community Services programs are a vital part of the mission of the College and represent those efforts of the College, often undertaken in cooperation with other community groups or agencies, which are directed toward providing educational solutions to localized social, economic, cultural or civic problems which are not met by formal degree programs.

Community Services encompass a continuum of service from personal development (directed toward individual goals) to community development (directed toward institutional goals.)

Community Services programs:

- (1) relate to all post-high school age groups.
- (2) are non-credit and may be as short as an hour or as long as needed to accomplish the goals of the program. Such programs are not locked into the quarter system of the College.
- (3) are offered at locations throughout the regions which are most convenient to the students.
- (4) utilize informal and non-traditional institutional approaches.
- (5) draw upon the best human resources available to carry out the programs without regard for teacher certification or other legalistic requirements.
- (6) do not have admission requirements.
- (7) require minimal enrollment information and record keeping.
- (8) may be offered at no cost to the student or require a fee which is designed to recover the instructional and administrative costs of the course.
- (9) involves the College in the community and the community in the College.
- (10) respond to changing needs and demands.

The Community Services Department operates a large number of non-credit courses throughout the state. The courses vary widely from region to region and from time to time to meet changing local needs. The courses are sponsored by the College, and by business, industry, labor unions, institutions and government.

Persons interested in part-time non-credit courses are encouraged to inquire about local offerings at the nearest regional institute.

The College's many non-credit courses offered for occupational advancement are designed to provide new knowledge or skills for indi-

viduals already engaged in a chosen field of endeavor or who want to enter a new field of work.

Such courses include typing, fundamentals of bookkeeping, machine calculation, human motivation, pharmacology, introductions to welding, electricity and air conditioning, techniques of supervision, blueprint reading and instrument reading.

Examples of Community Services work with private industry and public institutions include a management organization course for Philco-Ford Corporation at Connersville, management courses for Indianapolis Metropolitan Government (Unigov), and municipal wastewater treatment courses for employees of the City of Bloomington.

The Indiana restaurant industry is being served by a short-term six-hour course offered at various locations to upgrade the performance of waitresses. The College has eight instructors certified by the United States Department of Labor to conduct courses in occupational health and safety to help industry meet new Federal standards. The College currently is tentatively planning programs to upgrade the performance of law enforcement agencies throughout the state.

Disadvantaged segments of the state population are being served through a variety of special programs. These include the Concentrated Employment Program (CEP) to provide basic education, "New Careers" sponsored by the Unemployment Security Commission to help underprivileged enter new careers as clerk typists, as aides in child care centers and similar employment opportunities. A skills center with nine programs is operated under the Manpower Development Training Act at South Bend. An eight-week professional truck driver training program is conducted at Indianapolis with the support of Federal funds provided by the State Board of Vocational and Technical Education in cooperation with the Teamsters Union and the Indiana Motor Truck Association.

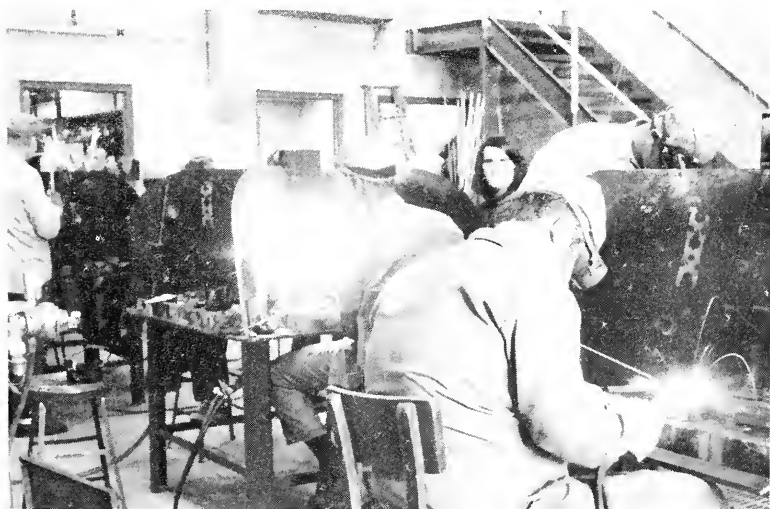
Employers interested in providing training for employees are encouraged to contact the Director of Community Services at the most convenient regional technical institute of the College.

### **apprenticeship programs**

Apprenticeship programs are sponsored by contractor-labor union joint apprenticeship committees at South Bend, Terre Haute and Indianapolis. Applications must be made to the appropriate apprenticeship committee. Further information may be had from the regional institutes offering apprenticeship programs.

## APPRENTICESHIP PROGRAMS

	Region 2 South Bend	Region 7 Terre Haute	Region 8 Indianapolis
Air Conditioning and Refrigeration			X
Architectural Drafting	X		
Asbestos Workers			X
Automatic Screw Machine	X		
Auto Mechanic	X		
Brick Mason	X	X	X
Carpenter	X		X
Cement Mason	X		X
Electrician	X	X	X
Glazier	X		
Industrial Apprentice			X
Industrial Electrician	X		
Industrial Pipefitter	X		
Ironworker	X		
Lather	X		X
Maintenance Mechanic	X		
Machine Repair	X		
Millwright	X		
Operating Engineer	X		X
Painters and Decorators	X		X
Patternmaker	X		
Plasterer	X		X
Plumber	X	X	X
Roofer	X		
Sheetmetal	X		X
Steamfitter	X	X	X
Tool and Die	X		X



# PROGRAMS FOR 1972 – 1973

	Quarter	R E G I O N S												
		1	2	3	4	5	6	7	8	9	10	11	12	13
		GARY	SOUTH BEND	FT. WAYNE	LAFAYETTE	KOKOMO	MUNCIE	TERRE HAUTE	INDIANAPOLIS	RICHMOND	COLUMBUS	MADISON	EVANSVILLE	CLARKSVILLE
Accounting Technology	6	x	x	x	x	x		x	x		x			
Accounting Clerical	3	x	x	x	x	x	x	x	x	x	x	x		x
Agricultural Equipment Technology	6								x					
Applied Fire Science	6		x											
Fire Protection	3		x											
Architectural Technology	6		x						x		x			
Architectural Drafting	3		x						x		x			
Automotive Body Repair	3	x		x				x						x
Automotive Service Technology	6		x	x					x				x	
Automotive Mechanics	3	x	x	x		x		x	x	x			x	x
Building Construction	4					x						x		
Commercial Art Technology	6		x							x			x	
Computer Technology	6	x	x	x		x	x		x		x			
Computer Operator	3	x	x	x		x	x	x	x		x			
Diesel Engine Mechanics	3							x	x					
Electronics Technology (Gen Option)	6		x	x		x		x	x		x		x	
Electronics Technology (Ind Option)	6							x						
Graphic Arts Technology	6							x						
Reproduction Printing	3							x						
Ground Water Specialist	3		x											
Heating & Air Conditioning Technology	6								x					
Heating & Air Conditioning	3					x	x		x					
Industrial Electricity	3						x			x				
Industrial Management Technology	6		x	x					x					
Inhalation Therapy	4				x									
Institutional Foods Management	6		x											
Institutional Foods Service	3		x											
Interior Design Technology	6											x*	x	



# PROGRAMS FOR 1972 – 1973

	Quarter	REGIONS												
		1	2	3	4	5	6	7	8	9	10	11	12	13
		GARY	SOUTH BEND	FT. WAYNE	LAFAYETTE	KOKOMO	MUNCIE	TERRE HAUTE	INDIANAPOLIS	RICHMOND	COLUMBUS	MADISON	EVANSVILLE	CLARKSVILLE
Library Aide	3													x
Machine Tool Repair	3									x				
Manufacturing Design Technology	6			x		x			x	x	x		x	
Manufacturing Drafting	3			x		x			x	x	x		x	
Marketing Technology (Ind Option)	6		x											
Marketing Technology (Retail Option)	6		x											
Marketing Clerical	3		x				x							
Mechanical Engineering Technology	6		x	x										
Mechanical Drafting	3		x	x										
Medical Assistant	6	x	x		x			x	x			x		
Medical Assistant, Certificate	3	x	x		x			x	x			x		
Medical Laboratory Technician	7		x		x				x	x				
Operating Room Technician	4	x	x		x				x					
Practical Nursing	4	x	x		x			x			x			
Pre-School Education Technology	6	x												
Radio-TV Repair	4			x		x		x	x					
Radiologic Technology	8								x					
Secretarial – Executive	6		x	x	x	x					x			
Secretarial – Legal	6				x	x		x			x			
Secretarial – Medical	6				x	x					x			
Clerical – Stenographic	3		x	x	x	x	x	x	x	x	x	x	x	x
Clerical – Typist	3						x							
Social Service Technology	6	x												
Tool Room Machine Operator	3								x	x				
Welding	3							x	x				x	

\*One-year only

February 24, 1972

## COURSE OUTLINES

	Cls Hrs	Lab Hrs	Cr
<b>0101 Pre-Technical Communication Skills</b>	<b>1</b>	<b>4</b>	<b>3</b>
Based on the needs of each individual, this basic course in communication skills consists of intensive training through special assignments in reading, writing, speaking and listening. The instruction is designed to aid students to prepare themselves for entrance into Introduction to Technical Communications, (0201). This course may be used as preparation for portions of the tests taken to earn the equivalency of the high school diploma.			
<b>0104 Pre-Technical Reading and Study Skills</b>	<b>1</b>	<b>4</b>	<b>3</b>
Practice in reading is arranged to improve basic reading skills, comprehension, rate of reading and retention of written materials. Continuing measurement of reading ability takes place to insure that the work is directed toward the needs of each individual.			
<b>0106 Pre-Technical Social Science</b>	<b>1</b>	<b>2</b>	<b>2</b>
Through individual study, this course assists the student in exploring successful procedures for pursuing a career. Requirements necessary to upgrade working habits in jobs are presented to increase confidence in personal worth and ability to succeed on the job.			
<b>0107 Pre-Technical Science</b>	<b>1</b>	<b>2</b>	<b>2</b>
The fundamental concepts of science are introduced, including those of physics, chemistry and biology, giving the student a foundation upon which further study can be based. This course may be used as preparation for portions of the tests taken to earn the equivalency of the high school diploma.			
<b>0201 Introduction to Technical Communications</b>	<b>1</b>	<b>2</b>	<b>2</b>
After individual testing to determine specific language needs, this course provides for extensive training in general writing, listening, reading and speaking. Emphasis is placed on the use of logic in the development of written and oral ideas.			
<b>0202 Technical Communication Skills</b>	<b>1</b>	<b>2</b>	<b>2</b>
Intensive training in clear, effective writing and other forms of communication is provided to enable the student to form logical solutions for special and work-related problems and to present ideas in a persuasive manner. Prerequisite: 0201.			
<b>0203 Business Communications</b>	<b>3</b>	<b>0</b>	<b>3</b>
The skills needed to write business communications are taught in this course. This includes preparation of action-getting letters, reports, and summaries of conferences. Emphasis is on business writing which is informative, concise and persuasive.			

Cls Hrs	Lab Hrs	Cr
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### 0204 Technical Reporting

3	0	3
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Skills for critical examination of technical data used in writing comprehensive reports are developed. Emphasis is placed on concise presentation of technical materials.

### 0211 Oral Communications

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Through intensive training in informative, persuasive and special purposes presentations, speech skills are developed.

### 0310 Pre-Technical Mathematics

1	4	3
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This is a study of whole numbers, fractions and decimals including verbal problems and measurements.

### 0314 Fundamental Arithmetic

2	0	2
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The fundamentals of addition, subtraction, multiplication and division are reviewed including both common and decimal fractions. Percentage, ratio and proportion, measurement and powers and roots are studied.

### 0315 Fundamentals of Algebra

3	0	3
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Algebra with emphasis on fundamental operations with signed numbers, solving linear equations and basic geometric and trigonometric relationships is made. Prerequisite: 0314,

### 0317 Fundamentals of Mathematics

5	0	5
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This course is a combination of Fundamental Arithmetic (0314) and Fundamentals of Algebra (0315).

### 0319 Technical Algebra I

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Algebra is studied including the operations with signed numbers, variables, first degree equations, special products, factoring, algebraic fractions and systems of linear equations. Slide rule techniques are included.

### 0321 Technical Algebra II

5	0	5
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This course is a continuation of Technical Algebra I beginning with a review of linear equations and factoring, and advancing to exponents and radicals, quadratic equations, graphs of equations and logarithms. Prerequisite: 0319.

	Cls Hrs	Lab Hrs	Cr
<b>0323 Technical Algebra III</b>	<b>5</b>	<b>0</b>	<b>5</b>
A study of systems of linear equations, the complex number system, functions and equations of higher degree is made. Prerequisite: 0321.			
<b>0325 Technical Trigonometry</b>	<b>3</b>	<b>0</b>	<b>3</b>
Trigonometry of right and oblique triangles, analytical trigonometry including vectors, identities and equations are emphasized. Prerequisite: 0319.			
<b>0327 Logic Development</b>	<b>5</b>	<b>0</b>	<b>5</b>
This course includes a study of logic, Boolean Algebra, number bases including the binary number system and the hexadecimal number systems. Prerequisite: 0319.			
<b>0329 Technical Applied Geometry</b>	<b>5</b>	<b>0</b>	<b>5</b>
Definitions, theorems and applications to technical problems, triangles, plane polygons, surfaces and solid figures are covered in this course. Prerequisite: 0317.			
<b>0331 Analytic Geometry and Calculus I</b>	<b>5</b>	<b>0</b>	<b>5</b>
Topics studied include rectangular coordinates, lines, conic sections, functions, graphs, differentiation, slope and maximum and minimum problems. Prerequisite: 0323.			
<b>0333 Calculus II</b>	<b>5</b>	<b>0</b>	<b>5</b>
Fundamental concepts of Integral Calculus and solutions of practical problems are studied. Prerequisite: 0331.			
<b>0335 Introduction to Statistics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Descriptive statistics (collection and presentation of data, frequency distributions, measures of central tendency, dispersion and skewness), index numbers, simple correlation and regression, curve fitting and introduction to statistical inference, sampling and probability are studied. Prerequisite: 0317.			
<b>0337 Mathematics of Finance</b>	<b>5</b>	<b>0</b>	<b>5</b>
This course stresses the fundamental operations and their application to business problems. Topics covered are percentage, discounts, markup, interest, installment purchases, depreciation, investments, payroll, insurance, annuities, graphs and statistics.			

	Cls Hrs	Lab Hrs	Cr
<b>0406 Microbiology</b>	<b>2</b>	<b>0</b>	<b>2</b>
Study includes an introduction to the basic principles of microbiology including definitions, classification, biological requirements and activities, specimen collection, infection, immunity, destruction and microbe description.			
<b>0440 Chemistry</b>	<b>3</b>	<b>2</b>	<b>4</b>
An introductory study of chemical operations, the atom, the elements, molecules, chemical bonding and properties of matter is made. Prerequisite: 0319.			
<b>0441 Chemistry II</b>	<b>3</b>	<b>2</b>	<b>4</b>
A study of the principles and theory of chemistry including solutions, acids and bases, chemical kinetics and equilibrium and an introduction to organic chemistry, biochemistry and industrial chemistry is made. Prerequisite: 0440			
<b>0442 Organic Chemistry</b>	<b>3</b>	<b>2</b>	<b>4</b>
This course is based on organic compounds, their classification and organic synthesis. Prerequisite: 0441.			
<b>0443 Quantitative Analysis</b>	<b>2</b>	<b>4</b>	<b>4</b>
This is a laboratory course in chemical problem solving and the steps in various chemical analyses. Prerequisite: 0441.			
<b>0445 Principles of Biochemistry</b>	<b>3</b>	<b>0</b>	<b>3</b>
A study of structures in relationship to biological functions of cellular constituents; carbohydrates, proteins, lipids, nucleic acids and enzymes, metabolic processes and control in the human body is made in this course. Prerequisite: 0441.			
<b>0446 Man and Science</b>	<b>3</b>	<b>0</b>	<b>3</b>
In this introductory course, theories, principles and practical application of biology, chemistry and physics are studied.			
<b>0450 Mechanics</b>	<b>3</b>	<b>2</b>	<b>4</b>
A study of properties of matter and mechanics includes the concepts of force, motion, work, energy and power; analysis of basic machines, mechanical advantages, efficiency and transmission of power. Prerequisite: 0319.			
<b>0451 Heat, Light and Sound</b>	<b>3</b>	<b>2</b>	<b>4</b>
Heat, wave motion, sound, light and optics are studied. Prerequisite: 0319.			

	Cls Hrs	Lab Hrs	Cr
<b>0452 Electricity and Magnetism</b>	<b>3</b>	<b>2</b>	<b>4</b>
This course involves the study of magnetism and eletrostatics, basic electric circuits, sources and effects of electric current, electromagnetic induction, alternating currents, generators and motors and the production and distribution of electric power, with technical emphasis. Prerequisite: 0319.			
<b>0455 Physical Science</b>	<b>3</b>	<b>0</b>	<b>3</b>
The basic concepts of physics and chemistry are introduced including measurements, heat and forces and their effect on metals and other materials. Emphasis is on the practical application of the physical sciences.			
<b>0457 Environmental Science</b>	<b>3</b>	<b>0</b>	<b>3</b>
Topics covered in this course are the earth and its resources, population and community ecology, water, air and noise pollution and the problem of solid wastes disposal.			
<b>0500 Macroeconomics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Macroeconomics includes an analysis of national income accounts, the operation of the monetary and banking system and a survey of international economic problems.			
<b>0501 Microeconomics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Microeconomics is an identification of economic principles at the industry level and includes economic analysis of pricing and output, the allocation of resources and distribution of income.			
<b>0505 Consumer Economics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Study and review of the cost of living and price levels, factors affecting consumer choices, buying practices, management of personal and family finances, the role of government in consumer protection and current consumer problems are included in this course.			
<b>0600 Personal and Community Health</b>	<b>2</b>	<b>0</b>	<b>2</b>
In this study of basic human health and hygiene, emphasis is on the understanding and development of sound health habits and attitudes.			
<b>0725 Occupational Orientation</b>	<b>1</b>	<b>2</b>	<b>2</b>
Career pursuits are investigated in the general area of study of the student's interests and enrollment and include interviews, study of occupational information and its sources, testing, exploration of job opportunities and research of specific jobs and fields.			

	Cls Hrs	Lab Hrs	Cr
<b>0750 Psychology</b>	<b>3</b>	<b>0</b>	<b>3</b>

This course presents a study of psychological behavior and research within employer-employee relationships. Information concerning human needs and behavior in business and industry is designed to improve individual attitudes, productivity and personal morale in working situations.

<b>0755 Human Relationships</b>	<b>3</b>	<b>0</b>	<b>3</b>
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In this course, the student develops effective skills necessary for understanding human motivation and behavior. This information is designed to help individuals succeed in an interdependent society.

<b>0875 Social Problems</b>	<b>3</b>	<b>0</b>	<b>3</b>
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The students are guided in the analysis of contemporary social problems such as ecology, crime, drug abuse, over-population and urban life with emphasis on community problems and cultural differences.

<b>1000 Seminar in Occupations</b>	<b>1</b>	<b>2</b>	<b>2</b>
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In this course which is designed to equip the student for a smooth transfer from training to the world of work, resource persons representing industrial and business organizations discuss locating jobs, job applications and interviews, preparation of credentials, human relations, employer-employee expectations, personal grooming and appearance, labor laws, union membership, taxes, insurance, liability, trade and professional associations and organizations, occupational journals, further training and job upgrading. Enrollment in this seminar is recommended during the last quarter of a student's study.

<b>1402 Farm Machinery</b>	<b>2</b>	<b>4</b>	<b>4</b>
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Basic mechanical principles of plows, planters, mowers, choppers, combines and other common farm machines, principles of safety and study of machinery economics are covered.

<b>1404 Farm Machinery II</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This course is a study of the operating principles of simple farm implements including the selection, field operation, maintenance and repair of basic farm machinery such as plows, disks, harrows and cultivators. Principles of design and mechanics, power supply, hitching and economics of farm machinery used are studied.

<b>1405 Farm Machinery III</b>	<b>2</b>	<b>4</b>	<b>4</b>
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The selection, care and repair of the larger units of farm equipment are covered. Operating principles of self-propelled and tractor-drawn equipment will be studied in the classroom and the field.

	Cls Hrs	Lab Hrs	Cr
<b>1406 Farm Machinery IV</b>	<b>2</b>	<b>4</b>	<b>4</b>
A study is made of specialized equipment such as balers, combines, corn pickers and other similar equipment.			
<b>1410 Tractor Engines I</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course covers tractor engine fundamentals and the principles of engine operation, including horsepower calculations, efficiency, combustion theory, types of engines, cylinder and valve arrangements, lubrication, fuel and cooling systems. Laboratory work consists of demonstrations, disassembly, inspection and reassembly of various engines.			
<b>1411 Tractor Engines II</b>	<b>2</b>	<b>4</b>	<b>4</b>
This is a study of tractor electrical systems, lubrication systems and lubricants.			
<b>1412 Tractor Engines III</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course provides a theoretical and practical study in correlating previous instruction by putting into practice engine operation, tuning and adjusting and trouble-shooting. This is performed in conjunction with the latest diagnostic equipment.			
<b>1415 Agricultural Diesels I</b>	<b>2</b>	<b>4</b>	<b>4</b>
Basic agricultural diesel engine principles and engine structure are studied. Also the relationship of parts, exhaust systems, and thermodynamics of combustion. Although the course will be primarily a study of all diesel engines, emphasis will be placed on those particular points of interest pertaining to farm diesels.			
<b>1416 Agricultural Diesels II</b>	<b>2</b>	<b>4</b>	<b>4</b>
This is a lecture and laboratory course dealing with the disassembly and reassembly of laboratory engines including the inspection, diagnosis, repair and final assembly and testing of these engines. It includes a study of diesel fuel systems.			
<b>1420 Tractor Systems</b>	<b>2</b>	<b>4</b>	<b>4</b>
This is a comprehensive study of present-day automatic transmissions, braking and steering systems found on tractors.			
<b>1421 Tractor Hydraulic Systems</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course is a study of the principles of hydraulics and their application to farm machinery, including components of tractor hydraulic systems, testing, maintenance and repair of hydraulic systems.			



<b>1430 Bookkeeping, Parts and Service Management</b>	<b>3</b>	<b>2</b>	<b>4</b>
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This is a study of the principles, practices and procedures in efficient and profitable operation of parts and service departments of a farm equipment retail business, and a study of the bookkeeping required for such an enterprise.

<b>1431 Farm Shop</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course is designed to develop the knowledge, skill and resourcefulness of the student in the use of hand and power tools and welders for farm construction and repair, primarily in metal work.

<b>1432 Suburban Farm Equipment and Accessories</b>	<b>2</b>	<b>4</b>	<b>4</b>
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A course in the assembly of component parts of suburban farm equipment into salable units utilizing the Manufacturer's Operators Set-up Manual as a guide. Repair of such units in the field in keeping with manufacturer's specifications and procedures.

<b>1501 Group Care of Children</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers the role, duties and responsibilities of the child care center staff, the primary objectives, goals and responsibilities of a center; also, basic value structure, setting, organization and programming of child care facilities.

<b>1502 Child Development I</b>	<b>3</b>	<b>2</b>	<b>4</b>
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This course covers child growth and development; including social, emotional, intellectual and physical development of the individual from birth to school age. Laboratory experiences such as direct observation of children in various settings will be provided to supplement the class work.

<b>1503 Child Development II</b>	<b>3</b>	<b>2</b>	<b>4</b>
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A continuation of Child Development I (1502) with emphasis placed on study of behavioral patterns and adjustment problems of the pre-school child. Laboratory experiences such as direct observation of children in various settings and working with children in groups will be provided to supplement the class work.

<b>1510 Language Arts for Children</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers methods and techniques of encouraging development of language skills in pre-school age children.

	Cls Hrs	Lab Hrs	Cr
<b>1511 Recreational and Creative Activities I</b>	<b>2</b>	<b>4</b>	<b>4</b>

This course covers recreational and creative activities as relates to influencing desired change in behavior in children, including analysis, of play situations appropriate to the needs and abilities of three to five year old children. Instruction and practice in teaching and supervising games for the young child are covered.

<b>1512 Pre-School Art</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course covers art materials and methods and techniques for providing art experiences for young children. Basic art skills are developed from the vantage point of the child care staff member.

<b>1513 Recreational and Creative Activities II</b>	<b>2</b>	<b>4</b>	<b>4</b>
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A continuation of Recreational and Creative Activities I (1511). Laboratory experiences include teaching and supervising group games in child care center setting.

<b>1514 Child Care, Health and Nutrition</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers methods and techniques of meeting the physical needs of pre-school children, including nutrition. Topics such as determination of individual requirements for energy protein, minerals and vitamins; food as a source of daily requirements; and the relationship of food and nutrition to the health and physical fitness of the child.

<b>1515 Pre-School Music</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course introduces materials, methods and techniques used in group programs for young children, including musical game activities and their uses in child care recreational and developmental areas.

<b>1516 Audio-Visual Materials and Methods</b>	<b>1</b>	<b>4</b>	<b>3</b>
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An introductory course on audio-visual materials, methods and techniques for use in group programs. Instruction is provided on the preparation and use of audio-visual materials and equipment.

<b>1522 Safety and Fire Prevention</b>	<b>2</b>	<b>0</b>	<b>2</b>
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This course covers the role and responsibilities of the child care center staff for fire and accident prevention, safety measures required by State law and local city ordinances. Covered also are responsibilities, methods and techniques for conducting fire drills for children, preparing accident reports and basic instruction in first aid.

	Cls Hrs	Lab Hrs	Cr
<b>1530 Menu Planning for Pre-School Children</b>	<b>2</b>	<b>0</b>	<b>2</b>
A continuation of Child Care, Health and Nutrition (1514) with emphasis on planning and serving proper meals and snacks for pre-school children. Covered also are instructions in planning meals for children requiring special diets and methods and techniques for providing group food service.			
<b>1601 Introduction to Fire Technology</b>	<b>3</b>	<b>2</b>	<b>4</b>
An introductory course reviewing the fire problems and broadly touching various phases of the fire technology field, includes characteristics and behavior of fire, hazardous properties of materials. The NFPA Fire Protection Handbook is used in this course.			
<b>1602 Fire Apparatus I</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course to include driving techniques, construction and operation of pumping engines.			
<b>1603 Fire Apparatus II</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course includes construction and operation of aerial ladders, aerial platforms, specialized equipment and maintenance. The IFSTA Manual 106 will be used as the text.			
<b>1604 Hazardous Materials I</b>	<b>2</b>	<b>2</b>	<b>3</b>
A review of basic chemistry, storage, handling laws, standards and fire fighting practices pertaining to hazardous materials.			
<b>1605 Hazardous Materials II,</b>	<b>3</b>	<b>2</b>	<b>4</b>
Continuation of the study of hazardous materials.			
<b>1606 Fire Department Hydraulics</b>	<b>2</b>	<b>4</b>	<b>4</b>
Review of basic mathematics, hydraulic laws and formulas as applied to the fire service.			
<b>1607 Fire Alarm and Communications Systems</b>	<b>1</b>	<b>2</b>	<b>2</b>
Fundamentals of municipal and local alarm systems, heat, smoke flame detectors, telephone, teletype and radio systems.			
<b>1608 Fire Fighting Strategy and Tactics</b>	<b>2</b>	<b>4</b>	<b>4</b>
Pre-plan for fires, combined operations, mutual aid, disaster planning and problems in unusual fire operations.			

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>1609 Fire Protection Equipment and Systems</b>	<b>1</b>	<b>2</b>	<b>2</b>
Portable fire extinguishing equipment; sprinkler systems; protective systems for special hazards; fire alarm and detection systems.			
<b>1610 Rescue Practices and Procedures</b>	<b>2</b>	<b>4</b>	<b>4</b>
Rescue practices, the human body, emergency care of victims, child-birth, artificial respiration. This course also includes procedures on aircraft rescue and fire fighting, and the fire department's responsibilities in protection of evidence at the scene of an aircraft incident.			
<b>1611 Fire Investigations</b>	<b>2</b>	<b>2</b>	<b>3</b>
Introduction to arson and incendiarism, arson law.			
<b>1612 Fire Service Organization and Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
Consideration of basic concepts and principles of administration applicable to the organization and administration of an efficient fire department.			
<b>1613 Fire Department Specifications</b>	<b>2</b>	<b>4</b>	<b>4</b>
Preparation of specifications for apparatus, hose and minor equipment, and fire station specifications.			
<b>1614 Fire Prevention and Inspection</b>	<b>1</b>	<b>2</b>	<b>2</b>
Organization and function of the fire prevention organization; inspections surveying and mapping procedures.			
<b>1615 Legal Problems in the Fire Service</b>	<b>3</b>	<b>0</b>	<b>3</b>
Laws governing the organization and operation of fire departments, liability, mutual aid, arson, fire prevention and building construction.			
<b>2101 Typewriting I</b>	<b>2</b>	<b>2</b>	<b>3</b>
A course for beginners in typewriting. It covers the development of fundamental touch typewriting techniques and skills and their application, including business letters, manuscripts, centering, tabulation, machine parts and care, and speed development.			
<b>2102 Typewriting II</b>	<b>2</b>	<b>2</b>	<b>3</b>
A continuation of Typewriting I with the higher development of vocational competency, includes typing of business letters, forms, manuscripts and tabulations. Speed and accuracy are stressed with emphasis on production typing problems and speed building. Prerequisite: 2101.			

	Cls Hrs	Lab Hrs	Cr
<b>2104 Executive Typewriting</b>	<b>2</b>	<b>2</b>	<b>3</b>

This course is designed to improve production typewriting ability in business situations. Problem and production techniques will include complex tabulation, statistical reports, rough drafts, manuscripts and forms. Prerequisite: 2135.

<b>2105 Medical Typewriting</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course is designed to improve production typewriting ability in the medical field. Emphasis is placed on articles, medical forms, case histories and correspondence utilizing medical terminology. Prerequisites: 2135, 4203.

<b>2106 Legal Typewriting</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course is designed to acquaint the students with various pre-printed forms and documents commonly used in a legal office. In addition, students will learn acceptable formats for the typing of various contracts and documents for which no pre-printed forms are available. Prerequisite: 2135.

<b>2124 Office Calculating Machines</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Office Calculating Machines is designed to give the student a competent skill level in the application of related problems and the basic operation of adding and calculating machines representative of machines currently being utilized in business offices.

<b>2135 Production Typewriting</b>	<b>2</b>	<b>2</b>	<b>3</b>
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Production typewriting stresses the improvement of production techniques which will include: correspondence, business forms, manuscripts, tabulation and secretarial projects. Students will also transcribe machine-recorded dictation. Correct use of grammar, spelling and letter format will be stressed along with the development of a high degree of productivity and skill. Prerequisite: 2102.

<b>2137 Technical Dictation and Transcription I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course includes an emphasis on the ability to take new matter dictation and the development of a rapid skill of typing a mailable copy from shorthand notes. Specialized vocabularies are introduced. Prerequisites: 2104, 2144.

<b>2138 Technical Dictation and Transcription II</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course continues the emphasis on ability to take new matter dictation and the development of a high degree of skill in transcribing mailable copy. Practice is given to develop typewriting, shorthand and technical English skills. Prerequisite: 2137.

	Cls Hrs	Lab Hrs	Cr
<b>2139 Legal Dictation and Transcription I</b>	<b>1</b>	<b>4</b>	<b>3</b>

This course is designed to develop student competence in specialized legal dictation and transcription of legal correspondence, forms and documents with emphasis on the student learning to construct shorthand outlines of legal terms. Prerequisite: 2106, 2144.

<b>2140 Legal Dictation and Transcription II</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course continues the emphasis on ability to take new matter legal dictation and the development of a high degree of skill in transcribing legal correspondence, forms and documents. Prerequisite: 2139.

<b>2141 Shorthand I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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An introductory course in shorthand with special emphasis upon basic theory, brief forms and speed in reading from plate notes. Dictation is introduced with emphasis placed on writing and transcription techniques.

<b>2142 Shorthand II</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course places emphasis in writing and transcribing dictated subject matter and the development of skill in formulating new outlines in accordance with the basic principles of shorthand. Extension of transcription techniques and practice as well as the essentials of good English principles are stressed. Prerequisites: 2101, 2141.

<b>2143 Shorthand III</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course includes a continued review of fundamentals and an emphasis on skill in taking new matter dictation and mailable transcription. Essentials of good English principles are stressed. Prerequisites: 2102, 2142.

<b>2144 Shorthand IV</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course includes an emphasis on speed building, new matter dictation and some transcription work on the production of mailable copy. Prerequisites: 2135, 2143.

<b>2149 Machine Transcription - Medical</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course is designed to familiarize the student with the varied types of dictation equipment and to develop a desired level of competence in transcribing these recorded messages to typewritten copy. The information to be transcribed shall relate to internal medicine, surgery, obstetrics, gynecology, pediatrics, orthopedics, otorhinolaryngology, urology, ophthalmology, neurology, psychiatry and dermatology. Prerequisite: 2102.

	Cls Hrs	Lab Hrs	Cr
<b>2150 Medical Office Bookkeeping</b>	<b>3</b>	<b>0</b>	<b>3</b>

A course designed to introduce the basic principles of bookkeeping as utilized primarily in a medical office setting. This course includes the principles of debit and credit, double entry bookkeeping, use of journals (particularly combined cost journal) and analyzing transactions. Also included are the use of ledgers, posting procedures, cash basis of accounting, handling petty cash, banking procedures, payroll, depreciation of accounts, balance work sheets and income statements.

<b>2151 Medical Filing and Indexing</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course is designed as a study of medical terminology, coding systems and methods of filing and indexing medical information.

<b>2152 Office Practice</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This is designed as a finishing course emphasizing the skills, techniques, and attitudes businessmen desire in office workers, including units of instruction in human relations, office machines, business correspondence, mailing, filing, telephoning, personal hygiene, dress and applying for a job. Laboratory experience in applying skills and knowledges gained in a previous business courses will be provided. Prerequisites: 2101, 2102.

<b>2153 Office Management and Procedures</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Management skills and techniques of business offices is emphasized. Human relations, personnel department functions and employment procedures are studied. Experience in applying skills and knowledges gained in office management situations will be provided.

<b>2155 Medical Office Management and Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course supplies the background for organization and management of a physician's office and introduces the student to governmental and individual types of health insurance coverage.

<b>2193 Medical Dictation and Transcription I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course is designed to provide a basic understanding of the techniques of dictation and transcription used by the medical secretary including the study of medical shorthand outlines. Dictation and transcription in the following fields of medicine are studied: internal medicine, surgery, obstetrics, gynecology, pediatrics, orthopedics, otorhinolaryngology, urology, ophthalmology, neurology, psychiatry and dermatology. Prerequisite: 2105, 2144, 4203.

	Cls Hrs	Lab Hrs	Cr
<b>2194 Medical Dictation and Transcription II</b>	<b>1</b>	<b>4</b>	<b>3</b>

This course emphasizes the basic principles and theory of medical stenography stressing vocabulary building and machine transcription of medical records and correspondence from the following fields of medicine: internal medicine, surgery, obstetrics, gynecology, pediatrics, orthopedics, otorhinolaryngology, urology, ophthalmology, neurology, psychiatry and dermatology. Prerequisite: 2193.

<b>2201 Accounting I</b>	<b>4</b>	<b>0</b>	<b>4</b>
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An introduction to the fundamental principles, techniques and tools of accounting. An understanding of the mechanics of accounting, collecting, summarizing, analyzing and reporting information about service and mercantile enterprises. Included are practical applications of the principles learned.

<b>2202 Accounting II</b>	<b>4</b>	<b>0</b>	<b>4</b>
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An introduction to accounting for payroll, the partnership, internal control, notes and interest and departmental accounting. A further study of sales procedures and valuation of receivables, inventories and fixed assets. Pre requisite: 2201.

<b>2203 Accounting III</b>	<b>4</b>	<b>0</b>	<b>4</b>
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An introduction to branch operation accounting. Further development of skill and knowledge of accounting. To learn journalism and statement presentation of corporated capital stock, receivables, intangible assets, deferred charges, long-term liabilities, temporary investments and long term investments. Co-requisite: 2202.

<b>2204 Accounting IV</b>	<b>4</b>	<b>0</b>	<b>4</b>
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This course covers advanced accounting principles related to the form and content of the income statement and the balance-sheet, cash receipts, cash disbursements, cash reconciliations, accounts receivable, bad debts, short-term financing and the concepts of cost or market inventory valuation. Prerequisite: 2203.

<b>2205 Accounting V</b>	<b>4</b>	<b>0</b>	<b>4</b>
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Advanced accounting principles dealing with corporations, temporary investments, long term investments, special bond transactions amortization, revaluation of plant and equipment, retirement of plant and equipment, repairs and maintenance, depreciation, natural resources, intangible assets, goodwill, corporate earnings and corporate dividends.



Cls Hrs	Lab Hrs	Cr
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<b>2211 Cost Accounting I</b>	<b>4</b>	<b>0</b>	<b>4</b>
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A study of job-order cost accounting procedures, manufacturing overhead control, departmentalization, material control, labor control and report forms. Prerequisite: 2202.

<b>2212 Cost Accounting II</b>	<b>4</b>	<b>0</b>	<b>4</b>
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This is a study of process cost accounting, standard cost procedures, estimating and controlling costs through use of budget and profit analysis. Prerequisite: 2211.

<b>2222 Income Tax I</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Accounting procedure and problems connected with the Federal Income Tax Law and state laws for individuals, proprietorships and partnerships are covered. Prerequisite: 2202.

<b>2223 Income Tax II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This is a study of the accounting procedure and problems connected with the Federal Income Tax Law and state laws for corporations, estates and trusts. Prerequisite: 2222.

<b>2242 Records Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
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This course covers basic principles and procedures of records storage and control, methods and systems for storing and retrieving special records and managing the records system.

<b>2251 Business Principles and Organization</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course includes an introductory study and analysis of our business system as a whole in relation to our economic society. It includes an introduction to business ownership, organization, principles, problems, management, control, facilities, administration, and practices to develop an understanding of American business enterprises and their functions.

<b>2271 Risk and Insurance</b>	<b>3</b>	<b>0</b>	<b>3</b>
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The various types of insurance, including life, health and accident, hospitalization, fire and storm, burglary, liability, automobile, marine, types of insurance companies, types of coverage, problems, government regulations are covered. This is an introductory course for further study in a specialized field.

	Cls Hrs	Lab Hrs	Cr
<b>2281 Business Law I</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course includes the study of the nature and sources of business law, a description of the judicial system and the nature of torts and crimes for which the law provides punishment. Emphasis is placed on legal situations encountered in the performance of contracts and breach of contracts, the creation of an agency, sales and negotiable instruments.			
<b>2282 Business Law II</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course is a continuation of Business Law (2281) with emphasis on topics which include bailments, secured transactions, partnerships and corporations, property, wills and trusts, insurance, suretyship, guaranty and bankruptcy. Prerequisite: 2281.			
<b>2283 Criminal Law</b>	<b>3</b>	<b>0</b>	<b>3</b>
This is an introductory course concerning the basic principles of criminal law and their application to individuals, including torts, petty and grand larceny and homicide.			
<b>2284 Basic Concepts in Social Service</b>	<b>3</b>	<b>0</b>	<b>3</b>
An introductory course that consists of concepts, principles and processes encountered by social service workers, with questions of motivation, acceptance and attitudes. Includes techniques of listening and interviewing.			
<b>2285 Social Resources of the Community</b>	<b>2</b>	<b>2</b>	<b>3</b>
This course provides an opportunity for the social work para-professional to become familiar with the range of facilities and services available in the community. The student will examine the services provided by a wide variety of agencies. He will learn proper referral methods and intake procedures for those agencies which provide services for clients with whom he is likely to come into contact.			
<b>2286 Urban Government and Politics</b>	<b>3</b>	<b>0</b>	<b>3</b>
Development, forms, functions, powers and problems of urban government in the United States. Emphasis on metropolitan areas, such as Chicago, and inter-governmental relations; examination of local politics and pressure group activity, administrative organization and fiscal responsibilities.			
<b>2293 Field Project and/or Case Study</b>	<b>1</b>	<b>arr</b>	<b>6</b>
The student will be given a special project or case study specifically related to the occupational area. The course should be a field project			

within the framework of actual working experience in business or industry or a research type case study including data collection and data analysis.

<b>2294 Field Project and/or Case Study</b>	<b>1</b>	<b>arr</b>	<b>4</b>
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The student will be given a special project or case study specifically related to the occupational area. The course should be a field project within the framework of actual working experience in business or industry or a research type case study including data collection and data analysis.

<b>2295 Field Project and/or Case Study</b>	<b>1</b>	<b>arr</b>	<b>2</b>
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The student will be given a special project or case study specifically related to the occupational area. The course should be a field project within the framework of actual working experience in business or industry or a research type case study including data collection and data analysis.

<b>2301 Introduction to Data Processing</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course covers the history of data processing, scope and significance of data processing, punched card unit records, electronic data processing equipment and basic computer concepts.

<b>2302 Operating Systems</b>	<b>3</b>	<b>4</b>	<b>5</b>
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A study of computer operating systems, their purpose, structure and various functions. The course will provide the student with a general understanding of how comprehensive sets of language translators and service programs operating under the supervisory coordination of an integrated control program form the total operating system of a computer. Prerequisite: 2303.

<b>2303 Hardware Concepts and Capabilities</b>	<b>4</b>	<b>2</b>	<b>5</b>
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A study of the components of computers, the functioning of those components and the capabilities they possess which enables them to perform the activities required to complete the problem solving tasks developed by computer programmers. Co-requisite: 2321.

<b>2306 Introduction to Data Processing and Programming</b>	<b>3</b>	<b>4</b>	<b>5</b>
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This course is designed to give a general introduction to data processing and programming with emphasis on electronic data processing. Topics include the development of data processing from manual methods through electromechanical to electronic, role of data processing in an organization, data processing applications, computer hardware, internal data representation, stored program concepts, programming systems, introduction to programming, operations research and data processing as a profession.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>2307 Computer Operations</b>	<b>2</b>	<b>6</b>	<b>5</b>
The student will learn actual computer operations and will become proficient in handling and setting up complex disk and tape file runs. The student will learn to run book and message control functions and to read job descriptions and flow charts.			
<b>2321 Cobol Programming I</b>	<b>3</b>	<b>4</b>	<b>5</b>
This course provides the student with a working knowledge of the programming language Cobol and its application to business data processing. Through laboratory experience, the student will gain proficiency in solving basic business problems with the Cobol language. Prerequisite: 2306.			
<b>2322 Cobol Programming II</b>	<b>3</b>	<b>4</b>	<b>5</b>
This course is a continuation of Cobol Programming I with emphasis on complex file handling techniques and the use of advanced Cobol extensions. Laboratory experience will develop a higher level of proficiency in the use of Cobol while developing a working knowledge of the use of advanced Cobol features and techniques. Prerequisite: 2321.			
<b>2323 Fortran Programming</b>	<b>3</b>	<b>4</b>	<b>5</b>
Introduction to a computational type of problem oriented language; use of arithmetical expressions, conditional control, iteration techniques, input-output specifications, tables, and subprograms to solve problems which involve computation. Prerequisite: 2306.			
<b>2330 Computer Logic</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course introduces the basic mathematical principles upon which computer operations are based. An expanded view of the real number system as well as an introduction to symbolic logic are provided and proficiency is developed in the use of numeric conversion techniques.			
<b>2341 Data Communications</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course develops in the student familiarity with modern data communications techniques as applied to data processing. The student learns the vocabulary and techniques common to remote processing, time sharing, data transmission and similar topics. Prerequisite: 2306.			
<b>2342 Problem Solving Techniques</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course will familiarize the student with those techniques necessary for the efficient solution of computer programming logic problems. Logic examples and exercises are used to develop student confidence and the ability to solve programming problems. Prerequisite: 2306.			

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>2343 Business Programming Applications</b>	<b>3</b>	<b>4</b>	<b>5</b>

An advanced course in the study of business programming applications with topics relating to distribution, manufacturing, banking and insurance corporations. Specific applications include billing, accounts receivable, sales analysis, payroll, inventory, and cost. These will be supported by a brief sketch of manual methods with a more detailed discussion in terms of computer systems and with exercises in programming. Prerequisite: 2306, 2321.

<b>2345 Report Program Generator (R.P.G.)</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course covers the use of the compiler language R.P.G. as a means of solving business problems. It covers the areas of multiple input and/or output, the use of business mathematics in the solution to business and other problems. Upon completion of this course the student is expected to be productive with R.P.G. as a compiler language.

<b>2346 PL/I Programming</b>	<b>3</b>	<b>4</b>	<b>5</b>
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This course will familiarize the student with the PL/I programming language, its capabilities and limitations. The student will learn to use PL/I to solve a variety of programming problems. Laboratory will include coding, debugging and testing of PL/I programs. Prerequisite: 2306.

<b>2347 Assembler Language Programming</b>	<b>3</b>	<b>4</b>	<b>5</b>
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This course will familiarize the student with a machine-oriented low-level programming language. The language taught will depend on machine access and will concentrate on the instruction set used for commercial application. Laboratory will include coding, debugging and testing of assembler language programs. Prerequisite: 2306.

<b>2350 Key punch</b>	<b>2</b>	<b>4</b>	<b>4</b>
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Development of a high level of skill in programming and operating the IBM keypunch and verifier, including speed and accuracy in key-punching and verifying.

<b>2360 Systems Analysis and Design I</b>	<b>3</b>	<b>4</b>	<b>5</b>
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Functions and techniques of systems analysis, design, and development. Topics include science analysis, system flow charting, data collection techniques, file design and management determination of processing and equipment requirements. Communications between user and the data processing department will be stressed as well as reporting methods. Study and analysis of problems that may be encountered and the possible solution to those problems by the use of case studies are covered in this course.

	Cls Hrs	Lab Hrs	Cr
<b>2701 Introduction to Libraries</b>	<b>5</b>	<b>0</b>	<b>5</b>

This course is an introduction to all major phases of library operation, especially as they pertain to the role of "Library Aide." Units include library history, governmental and legislative relationships, financial structure and systems, technical and public services, library systems, organizational patterns, physical plants, public relations and media systems.

<b>2702 Introduction to Library Technical Services</b>	<b>5</b>	<b>0</b>	<b>5</b>
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The student receives an introduction to techniques of library operation. Units include orders and acquisitions, cataloging and classification, filing, shelving, design and use of card catalog, materials handling, mending, automation, serials control, government documents and other "non-book" materials. Prerequisite: 2701

<b>2703 Introduction to Library Public Services</b>	<b>5</b>	<b>0</b>	<b>5</b>
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This course is an introduction to public services in library operations. Unit includes a study of services peculiar to different types of libraries (e.g. SDI systems for special libraries), hardware applications, circulation operations, information services, reference services, arrangement of materials, inter-library loan systems, personnel requirements and human relations.

<b>3005 Principles of Retailing</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Topics covered are business location, building fixtures and equipment, store layout, retail management organization, purchasing procedures, merchandise discounts and ordering policies, product inventory control systems, planning the merchandise budget, receiving, checking, and marketing merchandise, retail store promotions, pricing, retail store services and trends in marketing.

<b>3007 Principles of Wholesaling</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This is an advanced study of the evolution, economic status, and management of non-retail marketing, the position of wholesaling in distribution, kinds of wholesaling, types of middlemen, internal organization and operation of wholesalers, trading areas, and an advanced analysis of the relationship between marketing policies of wholesaler and manufacturer and changing patterns of wholesale distribution.

<b>3015 Small Store Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
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The principles of operation and management applicable to small stores are studied. Special attention is paid to investigating business opportunities, organizing, financing, and controlling small business. Group projects are investigated by students in areas such as financing, incorporating, and obtaining legal advice.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>3019 Merchandise Buying</b>	<b>3</b>	<b>0</b>	<b>3</b>
Analysis is made of the principles and methods that determine successful merchandise selection. Included in the study are organizations for buying, knowing what to buy, determining where and how to buy, and the aspects of merchandising involved in selling.			
<b>3020 Credit Procedures</b>	<b>3</b>	<b>0</b>	<b>3</b>
Principles and methods of credit administration in the mercantile and retail field, including sources of information, credit policy, credit control, legal remedies, and collection techniques are covered.			
<b>3025 Salesmanship I</b>	<b>3</b>	<b>0</b>	<b>3</b>
Selling in the American economy, salesmanship, the salesman's job and qualifications, the consumer's wants and make-up and the effect of these areas on the entire field of business are studied.			
<b>3026 Salesmanship II</b>	<b>3</b>	<b>0</b>	<b>3</b>
This is a survey course of sales and the techniques of selling a service. Equal stress is placed on selling the product as well as selling the service. The course covers all phases of the sales including approach, demonstration, close and departure. A short selection is given on development of the personality and the art of selling one's self.			
<b>3050 Principles of Purchasing</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course is a study of the organization and operation of a purchasing department. Policies dealing with inventory control, vendor relations, purchasing responsibilities, evaluation of suppliers, source selection, value techniques, standardization, scrap disposal, contract legalities and negotiations are covered.			
<b>3101 Principles of Advertising and Display</b>	<b>3</b>	<b>0</b>	<b>3</b>
The purposes of advertising, the economic and social aspects of advertising, slogans, trademarks, idea visualization, the mechanical production of advertisements, the media plan, newspaper advertising, radio advertising, television advertising, direct mail advertising, outdoor advertising, packaging and labeling, and the advertising campaign will be covered.			
<b>3440 Marketing I</b>	<b>4</b>	<b>0</b>	<b>4</b>
This course is an introduction to the problems of manufacturers, wholesalers, and retailers as they relate to marketing goods and services. Attention is paid to channels of distribution.			

	Cls Hrs	Lab Hrs	Cr
<b>3441 Marketing II</b>	<b>4</b>	<b>0</b>	<b>4</b>
A continuation of Marketing I (3440). Types of business enterprises, how to enter business, competition, pricing, market research, credit policies, and management techniques are discussed.			
<b>3442 Marketing III</b>	<b>4</b>	<b>0</b>	<b>4</b>
This portion of marketing considers the distributive structure, the pricing system, promotional activities, and planning and evaluating of the marketing effort.			
<b>3505 Introduction to Hotel-Motel Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course traces the growth and development of the lodging industry from early inns to modern skyscraper hotels and highway motels; the organization of hotel operations; opportunities and future trends.			
<b>3506 Motel-Motor Hotel Management</b>	<b>2</b>	<b>0</b>	<b>2</b>
A unit of study designed for operators of smaller properties, which is designed to provide a thorough understanding of many administrative techniques required to manage today's motel. Topics covered include the history and nature of motel business, financial considerations, space utilization, sales promotion, guest relations, guest room facilities, food and beverage facilities, accounting records, interpreting financial statements and administrative control.			
<b>3550 Nutrition I</b>	<b>2</b>	<b>0</b>	<b>2</b>
This is an introductory course in nutrition which covers determination of individual requirements for energy protein, minerals, and vitamins; foods as a source of daily requirements, and the relationship of food and nutrition to optimal physical fitness.			
<b>3572 Introduction to Volume Food Preparation</b>	<b>1</b>	<b>8</b>	<b>5</b>
Fundamentals of cooking learned through lectures and lab work cooking. Fundamentals are covered that apply to all cooking and are requisite to progress in the cooking field. The student is given the how and why of all training to include personal hygiene, sanitation and safety. Basic menu writing and balancing meals as well as the knowledges needed for progressive steps in preparing completed meals.			
<b>3573 Introduction to Volume Food Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course stresses the steps taken in getting the completed meal to the customer in the fastest and best manner while retaining quality, using various types of table setups. The types of service covered are American, French, Russian, and others. Waiter training is important and			



emphasized. Busing, cleaning and resetting of dining room, kitchen cleanup, dishwashing and sanitation are all stressed. Proper storage of all portable equipment is a continuing daily practice throughout the program.

<b>3574 Volume Food Preparation</b>	<b>1</b>	<b>8</b>	<b>5</b>
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Introduction into methods of preparing foods in volume for large feeding operations, equations for raising or lowering recipes, math used to determine per portion costs so as to determine a profitable selling price are covered. Preparation of volume foods, methods of retaining top quality in prepared foods until dispersement, timing of activities to have products ready just prior to service and the limitation of menu items in this type of food service.

<b>3575 Volume Food Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
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Methods used to dispense volume foods: cafeteria table service, wagon service, in-plant feeding, sanitation and clean up procedures necessitated by volume feeding.

<b>3576 Food and Beverage Management and Services</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Covers the entire food and beverage operations from purchasing, receiving and storage to preparation and service.

<b>3577 Food Production Principles</b>	<b>2</b>	<b>0</b>	<b>2</b>
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This course is designed to teach those with management responsibilities how to produce quality foods in quantity.

<b>3578 Institutional Foods Preparation</b>	<b>1</b>	<b>8</b>	<b>5</b>
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For institutions such as college, universities, hospitals, factories, nursing homes and other institutions feeding on large scale with multiple choice menus. This course covers figuring total food preparation predicated on highest possible number of customers and reducing this by percentage figures from same time previous month and previous year; percentage of popularity of each menu item from the same records and the effect of weather upon sales. Marketing for good sales potential of available food and meals based on popularity of the items. Multiple entres meals are prepared based on the above methods.

<b>3579 Institutional Foods Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
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Cafeteria and dining room service, cart service, prepared tray service and portable hot cart service. Clean up and sanitation entailed in all of the above methods.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>3581 Food and Beverage Purchasing and Services</b>	<b>3</b>	<b>0</b>	<b>3</b>
A detailed study of the major groups of food purchased by quantity buyers, including fresh fruits and vegetables, processed fruits and vegetables, dairy products, cereals and cereal products, beverages, poultry and eggs, fish and shell fish, meats and alcoholic beverages.			
<b>3582 Gourmet Food Preparation</b>	<b>1</b>	<b>10</b>	<b>6</b>
Student makes the transition from the volume type food preparation to the gourmet foods, where the highest quality of food is prepared and each dish is a challenge for the student to meet, the most exacting taste and eye appeal. Smaller or individual dish preparation is the mode and each student takes his turn in leading the operation in gourmet preparation. Marketing, menu writing, recipe research and methods are done by the class as well as preparation and the potentials of showmanship are used.			
<b>3583 Gourmet Food Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
The white linen formal dining individual presentation by the waiters, eating and the critique are stressed. Standard clean up procedures are covered.			
<b>3584 Gourmet Specialties Preparation</b>	<b>1</b>	<b>10</b>	<b>6</b>
Continuation of gourmet cooking with special attention to fanciwork on hors d'oeuvres, cake decoration, garnishes, outstanding salads and dressings, unusual vegetables with exquisite sauce and high quality bakery products. Special attention is given to every phase of the gourmet meal to include napkin folding, decorative butter, vegetable flowers, relishes, etc.			
<b>3585 Gourmet Specialties Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course includes hors d'oeuvres service, main course service, and a waiter service for each small table, and provides for show presentation of each course of the meal including flaming or fancy desserts. Standard clean up procedures.			
<b>3587 Gourmet Buffet Service</b>	<b>1</b>	<b>2</b>	<b>2</b>
Buffet setting supervisory assignment of tasks to be performed such as the number of cook attendants behind the buffet line to carve and/or serve, assignment of runners to keep buffet filled and cooks in kitchen to keep food coming are covered. Other content covered: responsibility of the host, traffic flow patterns, greeting and seating of guests, as needed to include supervision of cleaning tables and the serving of dessert and beverage, determination of salvagable foods and the storage of remaining food and supervisory responsibilities related to clean-up and sanitation.			

	Cls Hrs	Lab Hrs	Cr
<b>3588 Gourmet Buffet Preparation</b>	<b>1</b>	<b>10</b>	<b>6</b>

This course covers buffet as a showcase of talents, including menu writing, center piece design and preparation utilizing such items as decorated food, carved ice or carved styrofoam, buffet layout according to exact specifics, the number and type dishes available refills, hot and cold, and devised methods of keeping the table neat at all times are emphasized. Research is done in the books of the buffet masters as to best dishes, best methods of preparation, best display and eating quality.

<b>4005 Nursing Procedures for X-Ray Technicians</b>	<b>1</b>	<b>0</b>	<b>1</b>
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The basic knowledge of nursing procedures pertinent to X-Ray technology.

<b>4007 Equipment Maintenance</b>	<b>1</b>	<b>0</b>	<b>1</b>
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An understanding of X-Ray machinery and the fundamentals of preventive maintenance.

<b>4010 Radiation Physics I</b>	<b>2</b>	<b>0</b>	<b>2</b>
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An introduction to the science of Radiation Physics essential for an understanding in the production of X-Ray, including radiation protection.

<b>4013 Film Quality</b>	<b>1</b>	<b>0</b>	<b>1</b>
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A lecture course presenting advanced information for the production of quality films.

<b>4014 Radiation Physics II</b>	<b>2</b>	<b>0</b>	<b>2</b>
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A continuation of Radiation Physics I (4010)

<b>4015 Radiation Therapy</b>	<b>2</b>	<b>0</b>	<b>2</b>
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An introduction to assisting the radiologists with the radiation therapy necessary for treatment of tumors and all diseases requiring radiation therapy and the diagnostic value of radioactive isotopes.

<b>4020 X-Ray Techniques</b>	<b>5</b>	<b>0</b>	<b>5</b>
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The theory of X-Ray exposure factors, which enables the student to correlate this knowledge to practical application, and acquaints the student with the care and handling of film and processing equipment.

<b>4029 Orientation to Radiologic Technology</b>	<b>1</b>	<b>0</b>	<b>0</b>
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The application of classroom and laboratory learning in the affiliating hospital school including an introduction to the radiology department

	Cls Hrs	Lab Hrs	Cr
and the hospital facility, office procedures, safety and first aid, and the routines pertinent to exposure factors and positioning.			
<b>4030 X-Ray Clinical Practices I</b>	arr	arr	1
The actual application of classroom and laboratory learning in the affiliating hospital school including radiographic positioning.			
<b>4031 X-Ray Clinical Practices II</b>	arr	arr	1
A continuation of (4030).			
<b>4032 X-Ray Clinical Practices III</b>	arr	arr	1
A continuation of (4031).			
<b>4033 X-Ray Clinical Practices IV</b>	arr	arr	1
A continuation of (4032).			
<b>4034 X-Ray Clinical Practices V</b>	arr	arr	1
A continuation of (4033).			
<b>4035 X-Ray Clinical Practices VI</b>	arr	arr	1
A continuation of (4034).			
<b>4036 X-Ray Clinical Practices VII</b>	arr	arr	1
A continuation of (4035).			
<b>4040 Principles of Radiographic Exposure I</b>	1	0	1
Radiographic Exposure I provides the student with a complete and thorough working knowledge of the manipulation of exposure factors.			
<b>4041 Principles of Radiographic Exposure II</b>	2	0	2
Radiographic Exposure II provides the student with an understanding of basic principles needed to construct charts for all situations and all technique ranges, and to acquaint the student with image intensification, cine, cameras, and TV systems.			
<b>4042 Principles of Radiographic Exposure III</b>	2	0	2
This section is devoted to the more refined radiographic exposures with emphasis on exposure factors for pediatric patients.			
<b>4050 Radiographic Positioning I</b>	1	0	1
This course provides the student with precise and detailed information of radiographic positioning of the structures and organs of the body.			

# **4051 Radiographic Positioning II**

<b>2</b>	<b>0</b>	<b>2</b>
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This section provides more precise and more detailed information of radiographic positioning.

# **4052 Radiographic Positioning III**

<b>2</b>	<b>0</b>	<b>2</b>
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This section is more detailed positioning with the troublesome special positions the student may encounter in the second year, with emphasis on pediatric positioning.

# **4053 Radiographic Positioning IV**

<b>2</b>	<b>0</b>	<b>2</b>
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This section is a more refined positioning. The student will be assisting the radiologists in a more professional capacity.

# **4054 Radiation Therapy Positioning**

<b>2</b>	<b>0</b>	<b>2</b>
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This section of positioning introduces the student to precise positioning of therapy patient in order for them to assist the radiologists.\*

# **4060 Film Critique I**

<b>3</b>	<b>0</b>	<b>3</b>
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Introduces the student to constructive criticisms by the radiologists and instructors of X-Ray films providing the student with the knowledge of quality X-Rays, plus classes deemed necessary by the teaching supervisor and the College's teacher coordinator; throughout the course.

# **4061 Film Critique II**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique I (4060).

# **4062 Film Critique III**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique II (4061).

# **4063 Film Critique IV**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique III (4062).

# **4064 Film Critique V**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique IV (4063).

# **4065 Film Critique VI**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique V (4064)

# **4066 Film Critique VII**

<b>3</b>	<b>0</b>	<b>3</b>
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A continuation of Film Critique VI (4065).

	Cls Hrs	Lab Hrs	Cr
<b>4080 Special Procedures</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course acquaints the student with specialized and highly technical procedures used in Radiography.			
<b>4081 Special Procedures II</b>	<b>2</b>	<b>0</b>	<b>2</b>
This section provides the student with working knowledge of specialized and highly technical procedures and an introduction to the contrast media used by the physicians and radiologists.			
<b>4082 Special Procedures III</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course provides the student with more refined procedures and an introduction to intraoral Radiography.			
<b>4090 General Examination Review</b>	<b>2</b>	<b>0</b>	<b>2</b>
This section is a general review of all sections pertinent to the student's examination by the A.R.R.T.			
<b>4095 Departmental Administration I</b>	<b>2</b>	<b>0</b>	<b>2</b>
The lecture course consisting of acquaintance with organization, function, supervision and financial arrangements relative to departments of radiology.			
<b>4096 Departmental Administration II</b>	<b>2</b>	<b>0</b>	<b>2</b>
The student's function with the radiology and administrative departments.			
<b>4203 Integrated Basic Science I</b>	<b>4</b>	<b>0</b>	<b>4</b>
The study of the human body as an integrated unit, including anatomy, physiology, medical terminology, and applications of physics, chemistry and microbiology.			
<b>4204 Integrated Basic Science II</b>	<b>4</b>	<b>0</b>	<b>4</b>
A continuation of Integrated Basic Science I (4203). Prerequisite: 4203.			
<b>4205 Basic Science For Practical Nursing I</b>	<b>4</b>	<b>0</b>	<b>4</b>
This course is designed to integrate the study of anatomy and physiology and its relationship to common disease conditions which include an introduction to the etiology, symptoms, treatment (medical and/or surgical) and necessary nursing measures utilized in the care of patients with these diseases.			
<b>4206 Basic Science For Practical Nursing II</b>	<b>4</b>	<b>0</b>	<b>4</b>
A continuation of Basic Science for Practical Nursing (4205).			

	Cls Hrs	Lab Hrs	Cr
<b>4210 Medical Terminology</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course covers learning the medical terms in their proper relationship to the anatomy of the body and the related disease, anomalies and surgeries.			
<b>4211 Medical Linguistics</b>	<b>2</b>	<b>2</b>	<b>3</b>
This course presents the ethics of medicine, professional conduct and words from Greek and Latin prefixes, suffixes, word roots and combining forms. It will teach the student meanings of medical words through the Greek and Latin parts, correct spelling of these terms, and the intelligent use of the medical dictionary.			
<b>4218 Personal and Vocational Relationships</b>	<b>2</b>	<b>0</b>	<b>2</b>
Personal and Vocational Relationships is a study of basic principles of human behavior and healthful living. The course encompasses the ethical, legal and vocational responsibilities of the practical nurse, the historical development of nursing and practical nursing as well as the development of communication skills to promote effective functioning in interpersonal relationships.			
<b>4220 Medical Ethics And Personal Health</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course presents the ethics of medicine, professional conduct and personal habits that are expected of allied health workers.			
<b>4227 Physiology</b>	<b>3</b>	<b>0</b>	<b>3</b>
A study of the function of the human body in health.			
<b>4228 Instrumentation</b>	<b>3</b>	<b>2</b>	<b>4</b>
Instrumentation theory and practice as applied to electronic equipment and automated systems in the medical laboratory. Prerequisite: 0440.			
<b>4229 General Pathology</b>	<b>3</b>	<b>0</b>	<b>3</b>
A study of the body in disease utilizing case studies, laboratory data and autopsy findings. Prerequisite: Physiology (4227).			
<b>4310 Fundamentals of Laboratory Techniques</b>	<b>1</b>	<b>6</b>	<b>4</b>
Elementary and basic skills encountered in the clinical laboratory. Identification of the role of the laboratory assistant in the clinical laboratory.			
<b>4401 Clinical Routine Analysis Techniques</b>	<b>arr</b>	<b>arr</b>	<b>1</b>
Principles and practice of laboratory techniques in routine analysis.			

	Cls Hrs	Lab Hrs	Cr
<b>4402 Clinical Routine Analysis Applications</b>	arr	arr	1
Study of the clinical applications of routine analysis in the hospital laboratory.			
<b>4403 Clinical Hematology, Techniques</b>	arr	arr	3
Principles and practice of laboratory techniques in hematology.			
<b>4404 Clinical Hematology, Applications</b>	arr	arr	3
Study and practice of the clinical applications of hematology in the hospital laboratory.			
<b>4405 Clinical Bacteriology, Techniques</b>	arr	arr	2
Principles and practice of laboratory techniques in bacteriology.			
<b>4406 Clinical Microbiology, Applications</b>	arr	arr	2
Study and practice of the clinical applications of microbiology in the hospital laboratory.			
<b>4407 Clinical Chemistry, Techniques</b>	arr	arr	3
Principles and practice of laboratory techniques in chemical analysis.			
<b>4408 Clinical Chemistry, Applications</b>	arr	arr	3
Study and practice in the clinical applications of chemical analysis in the hospital laboratory.			
<b>4409 Clinical Serology, Techniques</b>	arr	arr	1
Principles and practice of laboratory techniques of serology.			
<b>4410 Clinical Serology, Applications</b>	arr	arr	1
Study and practice in the clinical applications of serology in the hospital laboratory.			
<b>4411 Clinical Blood Bank, Techniques</b>	arr	arr	2
Principles and practice of laboratory techniques in blood bank.			
<b>4412 Clinical Blood Bank, Applications</b>	arr	arr	2
Studies of the principles and performance of the routine procedures in the Clinical Laboratory Blood Bank, consisting of detection of various blood group system antigens and antibodies. Inclusive shall be immunologic theories; compatibility testing theories; hemolytic disease of the newborn, procedures and principles; donor screening, phlebotomy and processing; and recommendations of the American Association of Blood Banks.			



	Cls Hrs	Lab Hrs	Cr
<b>4413 Clinical Practicum</b>	arr	arr	6
This course is designed to provide the student with additional time in a clinical area of his choice either to reinforce or expand his abilities.			
<b>4414 Techniques I</b>	arr	arr	6
The principles and practices of advanced laboratory techniques in hematology, serology, immunohematology and routine analysis.			
Prerequisites: 4403, 4411, 4310, 4409, 4401.			
<b>4415 Techniques II</b>	arr	arr	6
The principles and practices of clinical bacteriology and chemistry including micro-biological chemical reactions, selective and differential media, clinical enzymes, bio-chemistry and blood gasses.			
Prerequisite: 4405, 4407, 4310.			
<b>4416 Applications I</b>	arr	arr	6
A ten-week study of lab skills in the following areas: hematology serology, and immunohematology. A minimum of 32 clock hours per week must be spent in this area.			
<b>4417 Applications II</b>	arr	arr	6
A twelve-week study of laboratory skills and chemistry of bacteriology and routine analysis. A minimum of 32 clock hours per week must be spent in this area.			
<b>4510 Nursing Techniques and Care I</b>	arr	arr	6
Basic principles and practices essential to the development of skills, attitudes and abilities that serve as foundations for safe patient care.			
<b>4511 Nursing Techniques and Care II</b>	arr	arr	4
Basic principles and practices essential to administration of selected medications and assisting with advanced techniques and skills.			
<b>4520 Nutrition</b>	2	0	2
Principles of nutrition for all age groups for practical nurses.			
<b>4530 Medical-Surgical Nursing I</b>	6	0	6
The in depth study of etiology, symptoms and diagnostic tests of disease conditions such as allergies and disorders of the musculo-skeletal system, cardiovascular system, respiratory system, endocrine system and their management through diet therapy, pharmacology, and other medical and/or surgical treatment including specific appropriate nursing measures.			
<b>4531 Medical-Surgical Nursing II</b>	5	0	5
The in depth study of etiology, symptoms and diagnostic tests of disease conditions or disorders of the gastrointestinal system, including metabolism, the genital urinary system, the reproductive system,			

	Cls Hrs	Lab Hrs	Cr
the nervous system, pharmacology, and other medical and/or surgical treatment including specific appropriate nursing measures.			
<b>4550 Practical Nursing Clinical Experience I</b>	arr	arr	5
Clinical assignments in selected hospitals including medical and surgical nursing, care of the mother and newborn, care of the child, and diet therapy.			
<b>4551 Practical Nursing Clinical Experience II</b>	arr	arr	6
A continuation of Practical Nursing Clinical Experience I (4550).			
<b>4552 Practical Nursing Clinical Experience III</b>	arr	arr	6
A continuation of Practical Nursing Clinical Experience II (4551).			
<b>4560 Maternal Child Health</b>	5	0	5
To prepare the student practical nurse with the techniques to meet the needs of both the mother and baby through understanding the maternity cycle of the mother, the growth, development and care of infants and children in both health and illness.			
<b>4710 Operating Room Technique I</b>	5	0	5
This course is concerned with development of basic principles of sterile technique in relationship to the pre-operative, operative and post-operative care of the patient. It includes an orientation to an ideal situation, adaption of basic principles, patient positioning and transportation, the understanding of basic concepts of anesthesiology, principles and skill in handling drapes, care of contaminated cases, understanding of explosion hazards and prevention of infections, processing, and preparation of non-disposable items, principles of sterilization, instrument identification, suture and needle use, care of surgical specimens, importance of accurate record keeping, surgical preps and skill in hand scrubbing and gowning and gloving procedures.			
<b>4711 Operating Room Technique II</b>	3	arr	4
This course is concerned with the practical application of aseptic technique. Role playing is used to help the student have experience in applying all phases of aseptic technique and to learn step by step procedures for typical general surgery operations. Prerequisite: 4710.			
<b>4720 Surgical Procedures I</b>	5	0	5
A basic study of surgical procedures in relation to the total physiological aspects of surgical interaction. This includes a concept of the involved anatomy, existing pathology, surgical hazards encountered, surgical procedure and a review of the total patient including typical patient, diagnostic tests, and immediate post-operative care.			

	Cls Hrs	Lab Hrs	Cr
<b>4721 Surgical Procedures II</b>	<b>5</b>	<b>0</b>	<b>5</b>

A study of advanced and specialized surgical procedures, in relation to the total physiological aspects of surgical interaction. This includes a concept of the involved anatomy, existing pathology, surgical hazards encountered, surgical procedure and a review of the total patient including typical patient, diagnostic tests, and immediate post-operative care.

<b>4730 Clinical Applications I</b>	<b>0</b>	<b>arr</b>	<b>3</b>
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Clinical experience in the cooperating hospitals will enable the O.R.T. student to correlate the basic principles and concepts of class room lecture to the working situation. Experiences include scrubbing and circulating on selected major and minor operations, observing and assisting with selected diagnostic procedures and observing and assisting with procedures in obstetrics and the Emergency room.

<b>4731 Clinical Applications II</b>	<b>0</b>	<b>arr</b>	<b>7</b>
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A continuation of Clinical Applications I (4730).

<b>4732 Clinical Applications III</b>	<b>0</b>	<b>arr</b>	<b>7</b>
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A continuation of Clinical Applications II (4731).

<b>4736 Surgical Anatomy I</b>	<b>5</b>	<b>0</b>	<b>5</b>
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A study of the anatomy and physiology of the human body as an integrated unit. The basic approach of dividing the body into its basic systems and then correlating the system with specific surgical procedures. Emphasis is put on structure specific to the operating room. The course includes the body as a whole, the skin, general survey, the skeletal, muscular, cardiovascular, lymphatic and the respiratory systems.

<b>4737 Surgical Anatomy II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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A study of the human body as a whole or integrated unit correlating the systems of the body with specific surgical procedures including the digestive, urinary, nervous, reproductive and endocrine systems with an emphasis on structures specific to the operating room.

<b>4738 Obstetrics</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course is designed to give the O.R.T student a basic understanding of the effect of pregnancy anatomically, physiologically, and psychologically on the obstetric patient. It is formulated to enable the O.R.T. student to function in the obstetrical unit, and in the O.R. on obstetrical cases, with a basic understanding of Obstetrics.

	Cls Hrs	Lab Hrs	Cr
<b>4739 Emergency Room Technique</b>	<b>2</b>	<b>0</b>	<b>2</b>

This course is designed to give the O.R.T. student a basic understanding of the psychological and physiological effect of trauma on the emergency patient. It is formulated to give the O.R.T. student basic knowledge of emergency conditions, emergency procedures, and to enable the O.R.T. student to function under adverse conditions that threaten a patient's well-being.

<b>4741 Microbiology for ORT</b>	<b>2</b>	<b>0</b>	<b>2</b>
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This course is specifically formulated for the O.R.T. student and is designed to give this student a basic background in the study of microbes, microbial pathogens, methods of studying microbes, and microbial destruction. The basic knowledge of microbiology presented is correlated by the O.R.T. in the Operating Room, the obstetrical unit, and the emergency room.

<b>4808 Medical Law and Economics</b>	<b>3</b>	<b>0</b>	<b>3</b>
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An introduction to the manner in which the law affects the practice of medicine with familiarity in medical practice acts, legal relationships of physicians and patients, professional liabilities and the physicians' public duties and liabilities.

<b>4820 Medical Office Procedures – Clinical I</b>	<b>4</b>	<b>4</b>	<b>6</b>
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This course is designed to familiarize the Medical Assistant with preparing the patient for examination in the physician's office; taking temperature, pulse, respiration, blood pressure; assisting the doctor; care and preparation of sterile equipment; methods of sterilization; care of stock medications and drug samples; nutrition and special diets; X-ray techniques; knowledge and care of instruments; needles, and syringes; ordering supplies; and appropriate action in emergency situations.

<b>4821 Medical Office Procedures – Clinical II</b>	<b>3</b>	<b>4</b>	<b>5</b>
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This course is designed as an expansion of 4820. Special emphasis is placed on principles and procedures as they are related to office practice and the individual types of health. Prerequisite: 4820.

<b>4840 Medical Assistant Laboratory Techniques</b>	<b>2</b>	<b>4</b>	<b>4</b>
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An introduction to various laboratory and X-ray procedures with emphasis on preparation of the patient for various procedures, their purposes and the expected norms of results.

<b>4850 Medical Assistants Clinical Experience I</b>	<b>0</b>	<b>16</b>	<b>4</b>
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Applied learning experiences in selected physician's offices, clinics, and hospitals. Prerequisite: 4820.

	Cls Hrs	Lab Hrs	Cr
<b>4853 Medical Office Procedures — Administration</b>	<b>3</b>	<b>2</b>	<b>4</b>

This course is designed to provide a basic understanding of the secretarial and bookkeeping duties and responsibilities as pertinent to the medical offices and health care agencies. It includes medical correspondence and records, insurance forms, case histories of patients, filing, financial administration, correct contact procedures with patients, hospitals, and professional agencies. It also includes considerations for desirable personality traits, interpersonal relationships, and attitudes within the medical office.

<b>4901 Inhalation Therapy Devices I</b>	<b>4</b>	<b>4</b>	<b>6</b>
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This course gives a brief history of inhalation therapy and acquaints the student with the principles and practices of oxygen administration, humidity and aerosol therapy. Emphasis is placed on safety and equipment.

<b>4902 Inhalation Therapy Devices II</b>	<b>4</b>	<b>4</b>	<b>6</b>
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Students are acquainted with the principles and practices of mechanical respirators, airway management, chest physiotherapy, and pharmacology applied to inhalation therapy. Prerequisite: 4901.

<b>4910 Nursing Techniques for Inhalation Therapy</b>	<b>2</b>	<b>2</b>	<b>3</b>
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A basic course in nursing arts which includes patient needs, asepsis, vital signs, isolation techniques and charting.

<b>4912 Inhalation Therapy Applications</b>	<b>5</b>	<b>0</b>	<b>5</b>
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This course provides the student with an understanding of advanced physiology of the cardio-respiratory system. Also the application of inhalation therapy practices to various disease states is covered. Emphasis is placed on the correction of abnormal physiology.

<b>4913 Inhalation Therapy Applications Lab</b>	<b>0</b>	<b>20</b>	<b>5</b>
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Students are given the opportunity to study the various applications of inhalation therapy by observation. Students are rotated through various clinical areas in the hospital.

<b>4914 Clinical Experience</b>	<b>0</b>	<b>25</b>	<b>6</b>
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Students develop skills and knowledge by performing the various inhalation therapy tasks in clinical areas under supervision.

<b>4916 Laboratory Data</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course provides the student with an understanding of techniques for sputum collection, lung function testing and blood gas analysis.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>6001 Techniques of Supervision I</b>	<b>3</b>	<b>0</b>	<b>3</b>

This course covers management development. The material is directed toward the responsibilities of any supervisor; including responsibilities of the supervisor functioning within an organizational structure. It relates to communications, motivation, delegation of authority, interviews, orienting and inducting new employees, and evaluation of employee performance.

<b>6004 Manufacturing Organizations and Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
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An in-depth study oriented to the first-line supervisor and other management personnel who are interested in the inter-relationships of the various departmental functions and the overall management problems encountered in a manufacturing organization. It includes the establishment of lines of authority, duties and responsibility, and rules for charting an organization structure. Also reviewed are manufacturing engineering and research, industrial engineering, materials management, process and product control, facilities planning, plant engineering, and manufacturing information systems.

<b>6008 Techniques of Supervision II</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course is designed to develop the necessary skills needed for effective management of people. The various topics will be developed through group discussion, case studies, and in-basket situations.

Prerequisite: 6001.

<b>6010 Industrial Safety and Fire Control</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers considerations of managerial and supervisory responsibility for fire and accident prevention, covers the investigation of accidents, preparation of accident reports, machine guarding, the use of personnel protective equipment, conformity to state industrial accident code and fire regulations, provision for first aid, the use of safety committees, and the methods of developing, advertising and promoting a good safety and fire prevention program.

<b>6012 Labor Management Relations</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Students explore the development and application of the labor laws and practices that form the basis of modern-day industrial relations. Among the topics considered are the history and development of organized labor, Federal labor legislation, labor-management laws, civil rights, state laws and regulations, local regulations, Federal mediation and conciliation service, the organizing drive, the strike, collective bargaining, anatomy of a labor agreement, handling in-shop grievances, and arbitration. Prerequisite: 6001.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>6014 Purchasing and Inventory Control</b>	<b>3</b>	<b>0</b>	<b>3</b>

This course provides a practical approach to procurement with regard to price, quality, quantity and delivery. Personal ethics, legal aspects of contracts, records, performance, and foreign procurement standards are discussed in detail. The role of the purchasing section or department, as a member of management's value analysis team, is studied in depth.

<b>6016 Manufacturing Costs and Value Analysis</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course applies recognized techniques and tests to measure value and thus eliminate unnecessary costs in design, development, and manufacturing without affecting quality. It differs from cost control because it is directed toward analyzing value - not cost.

<b>6018 Production and Inventory Control</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course is designed to bring the range of concept and techniques to useful application in the practical design of production planning, inventory control systems, and follow-up.

<b>6020 Quality Control</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Emphasis is placed on the principles and techniques of quality control to fulfill the organizational objectives of completing the job correctly the first time. The purpose of the course is to provide unit managers and supervisors with an understanding of the use of scientific quality control. Topics covered include vender-customer relationships, sampling inspections, process control and tests for significance. Emphasis is placed on an individual being able and qualified to determine what type of quality control is best for a particular industry.

<b>6030 Economics of Industry</b>	<b>3</b>	<b>0</b>	<b>3</b>
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A course covering fundamental economics and basic principles of business systems. Everyday terminology is used and emphasis is placed on practical economics as opposed to the theoretical. Subjects covered include various types of business organization, costs and pricing, competition, money system, taxes, productivity and automation.

<b>6034 Motion and Time Study</b>	<b>4</b>	<b>0</b>	<b>4</b>
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A study of time and motion in the practical application area, using industrial practice as a basis for the establishment of rates. The subjects will include elemental breakdown sheets, leveling factors, variables, M.T.M. application, standard data, general purpose data, sampling study, direct and indirect standards, and graphical expression.

	Cls Hrs	Lab Hrs	Cr
<b>6035 Job Analysis and Evaluation</b>	<b>3</b>	<b>0</b>	<b>3</b>

This course covers the principles of objective job analysis, establishment of proper job description and development of job content, requirements and limitations. The evaluation studies cover various approaches to job evaluation such as ranking, factor or point comparison and the relationships of results to wage scales.

<b>6040 Plant Layout and Process Planning</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Factory planning is studied with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment will be covered. The principles, practices and methods of process planning are included as well as tooling determination, operational sequence, setup and operational time, routing forms and interpretation of charts, and process analysis of selected jobs.

<b>6042 Traffic and Transportation Management</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course is presented for the development of personnel associated with or working in the transportation and traffic management field. The course is designed to cover intermediate management, technical development and other phases of transportation organizations. It includes discussions covering the American transportation system, Federal regulations, freight traffic territory, freight classification, principles of freight rates and tariffs, shipping documents and their application, special freight services, and a study of freight claims.

<b>6050 Industrial Safety and Plant Protection</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers day-to-day responsibilities of management and supervision to obtaining an accident-free organization. Emphasis is placed on first aid, fire prevention, mounting of guards, control, starting and stopping of machines, accident investigations and other preventive measures. Also covered are the methods of advertising good safety practices, rules of plant protection in relation to safety, and plant protection.

<b>6051 Safety Regulations</b>	<b>3</b>	<b>0</b>	<b>3</b>
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This course covers both Federal and state regulations regarding the safety and health of employees. Emphasis is given on recording and maintaining an accident severity rate, correctly submitting workman's compensation claims, insurance claims, and managing a safety program in compliance with laws or contractual agreements. The Federal Occupational Health and Safety Act will be discussed in depth.



	Cls Hrs	Lab Hrs	Cr
<b>6101 Principles of Air Conditioning and Refrigeration</b>	<b>2</b>	<b>4</b>	<b>4</b>

A study of the purpose, design and operation of the mechanical refrigeration systems to develop an understanding of their theory Included are the operating characteristics of condensers, receivers, evaporators common refrigerants and controls and the use of testing equipment, safety and protective devices.

<b>6102 Heating Principles</b>	<b>4</b>	<b>4</b>	<b>6</b>
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A study of the three basic heating systems--warm air, hot water and steam. These include stokers, oil burners, filters, registers and heat transfer units. There are problems in heat loss calculation for residential and commercial installations together with the selection and sizing of heating systems. The laboratory work includes the installation, operation, testing and trouble-shooting the heating system and associated controls.

<b>6103 Commercial Refrigeration Systems</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This is an instruction to the design, layout, calculations and operation of complete commercial systems. Various types of defrost mechanisms, basically electric and hot gas, with variations, are studied and analyzed. Heat load calculations for both high and low temperature requirements are studied. Time clock initiated control systems used in conjunction with pressure and temperature controls, magnetic starters and other electrical control devices are covered. Prerequisite: 6101

<b>6104 Burner Service</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This course acquaints the student with oil, gas, (natural-bottled) and electric burners. Their adjustment and replacement as well as repair of the units is involved. Prerequisite: 6502.

<b>6105 Sheet Metal Fabrication and Layout</b>	<b>1</b>	<b>4</b>	<b>3</b>
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A course in the basic elements of sheetmetal work as applied to the design, layout and construction of heating-cooling duct work. The student will proceed rapidly into practical layout problems met in heating, ventilating and air conditioning. Prerequisite: 6416; Co-requisite: 0319.

<b>6106 Air Movement and Ventilation</b>	<b>4</b>	<b>4</b>	<b>6</b>
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A study of special problems in the areas of air handling for heating, air conditioning and ventilation. This includes problems in air duct design, psychometric problems of design and installation of equipment.

<b>6107 Electrical Circuits and Controls</b>	<b>2</b>	<b>4</b>	<b>4</b>
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The course provides a background in the theory and operation, application and installation of electrical, electronic and pneumatic control

circuits, and control devices used in ventilation heating, refrigeration and air conditioning systems. Basic control circuits are combined in various ways to control motors, dampers and valves used with equipment of various types. There will be practice in layouts, including symbols and schematic diagrams. Prerequisite: 6502.

**6110 Advanced Heating and Air Conditioning Problems 3 6 6**

Calculations and problems coordinated with laboratory operations and tests including the study of air distribution duct design, fans, filters, diffusers, electric and pneumatic controls. Also included is a study of insulation materials, chimneys and flues. Laboratory work includes use of pilot tubes, anemometers, manometers and draft gauges in checking duct systems for heating and cooling operations. Other laboratory problems include duct construction, diagraming and testing various wiring requirements. Prerequisites: All technical courses up to the fifth quarter. (See curriculum outline.)

**6111 Psychometrics of Air Conditioning Systems 2 0 2**

The course deals with the properties of air, humidity control and the variations of controlled conditions with a change in load or ambient conditions for maximum human comfort.

**6112 Advanced Commercial Refrigeration Systems 2 6 5**

This course covers trouble shooting, wiring of control circuits and system analysis as well as testing these phases. The methods of defrosting commercial refrigeration systems are also studied. These are case problems involving the product to be cooled, load calculations, temperatures to be maintained, various types of insulations, humidity control, system balance and component capacity. Prerequisites: 6101, 6103, 6107.

**6113 Advanced Air Conditioning Systems Analysis 2 6 5**

An advanced study of design, trouble shooting and problems associated with large tonnage air conditioning systems, and overall analysis and assessment of the installation for satisfactory operation.

**6114 Heating Systems Trouble Shooting 1 2 2**

After definite service procedures are a part of the heating service mechanics practice, this course adds systematic methods of trouble shooting, identifying and correcting types of defective operations in gas or electric hot air heating systems--the burner, controls, small adjustments and operating conditions.

**6115 Cooling Systems Trouble Shooting 1 2 2**

After the cooling system mechanic has acquired functional knowledge

of procedures for normally servicing the details of cooling systems, this course demonstrates the trouble shooting or emergency range of operating faults which can occur in residential year-round air conditioning such as drafts, shortage of air supply at grills, water leaking from units, vibration, hissing noise at expansion valves, electric malfunctions, motor overheating, motor failures, with step-by-step identification of symptoms, causes and remedies.

<b>6116 Duct Design</b>	<b>3</b>	<b>0</b>	<b>3</b>
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There is demonstration and practice in carefully designing air ducts for the transmission of air in a forced-air heating, ventilation or air-conditioner system from the standpoint of economy and proper functioning. There is special attention given to air duct systems, heat gains in ducts, resistance loss in duct systems, fans and blowers.

<b>6220 Fundamentals of Interior Design I</b>	<b>2</b>	<b>2</b>	<b>3</b>
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The student receives an introduction to the study and application of furniture forms, color analysis for interiors, fabric patterns, surface textures and accessory scale. There is analysis of interior decoration as it exists today in terms of career opportunities included.

<b>6221 Fundamentals of Interior Design II</b>	<b>2</b>	<b>2</b>	<b>3</b>
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A concentrated study is made of furniture, fabric patterns and textures, lighting and accessories with emphasis on styles and periods.

<b>6230 Textiles I</b>	<b>2</b>	<b>2</b>	<b>3</b>
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The student studies textiles, their fiber content, uses, characteristics and care. Interpretation of textile laws and the regulations on labelling are covered.

<b>6231 Textiles II</b>	<b>2</b>	<b>2</b>	<b>3</b>
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This course places emphasis on textiles as they relate to the field of interior decoration. Physical properties and characteristics of carpets, wall coverings, upholstery, and draperies are covered.

<b>6232 Advanced Textiles (Studio Procedures)</b>	<b>1</b>	<b>4</b>	<b>3</b>
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A comprehensive study is made of textiles as applied to interior design with special emphasis placed on the relationship of color, fabric texture, and furniture. The three major categories of floor covering and different carpet weaves will be studied. Practical problems are given on the proper method of estimating and installing carpet, and construction techniques, estimating, and selection of draperies.

<b>6240 Fundamentals of Structural Design I</b>	<b>2</b>	<b>4</b>	<b>4</b>
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The fundamentals of drafting and use of drafting equipment as applied to interior design is studied. Basic knowledge of architectural styles and concepts is covered.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>6241 Fundamentals of Structural Design II</b>	<b>2</b>	<b>4</b>	<b>4</b>
Students study the formation of a set of residential floor plans, layout, site selection and final design drawings.			
<b>6250 Consumer Education for Interiors</b>	<b>2</b>	<b>2</b>	<b>3</b>
The general factors influencing quality buying for interiors are studied. Materials and trends are examined in relation to needs of consumers.			
<b>6260 Furniture Selection and Arrangement I</b>	<b>2</b>	<b>2</b>	<b>3</b>
The students study furniture selection and arrangement within residential and commercial interiors. The course includes the study of functions, versatility, combination of furniture styles, effects of lighting, picture hanging, and accessories, and the practical application of principles learned.			
<b>6261 Furniture Selection and Arrangement II</b>	<b>2</b>	<b>2</b>	<b>3</b>
Students receive practical application in analyzing existing conditions of interiors or areas. They work with basic floor plans and assigned furnishings to be arranged with advancement to floor plans of various types.			
<b>6270 Applied Interior Design I</b>	<b>2</b>	<b>6</b>	<b>5</b>
This course provides actual experience in designing interiors with consideration for personality and functional needs of the client. It includes the application of knowledge of furniture forms, floor plans, color analysis, fabric patterns, surface textures, budget factors, and accessory selection.			
<b>6271 Applied Interior Design II</b>	<b>2</b>	<b>6</b>	<b>5</b>
Students carry out actual design projects in their entirety with complete description of the background of the client. This includes a formal presentation, defense of design presented, and the responsibility for meeting a completion date.			
<b>6280 Display I</b>	<b>3</b>	<b>4</b>	<b>5</b>
Students study the basic principles governing displays and the special techniques and equipment required in carrying out display work.			
<b>6281 Display II</b>	<b>1</b>	<b>4</b>	<b>3</b>
A continuation of Display I (6280) with emphasis placed on the practical application of the principles and techniques learned for creative display work.			

	Cls Hrs	Lab Hrs	Cr
<b>6285 Retailing</b>	<b>3</b>	<b>0</b>	<b>3</b>

Students study the structure of retailing and the variety of problems associated with the management of retail stores of various types.

<b>6305 Science of Art Materials</b>	<b>2</b>	<b>2</b>	<b>3</b>
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The student will study the physical properties and make-up of pigments, binders and media. The differences between media such as watercolor, gouache and polymer will be studied. The chemical and physical make-up of different inks and their particular use will be related to the various forms of reproductive printing. The student will study the various forms of art supports and the most common types of paper used for reproduction printing.

<b>6307 History of Art I</b>	<b>2</b>	<b>0</b>	<b>2</b>
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The student studies art from prehistoric times through Greek and Roman times. A view of the art of different eras in light of cultural backgrounds and interrelation of major periods of art history is presented. A study of the major changes reflected in the art of the times is included.

<b>6308 History of Art II</b>	<b>2</b>	<b>0</b>	<b>2</b>
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A continuation of History of Art (6307), this course covers early Christian and Byzantine art to the present.

<b>6314 Printing Estimating</b>	<b>3</b>	<b>0</b>	<b>3</b>
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Estimating of each individual part of a printing job, putting it all together to come up with the entire cost of the job, making out of requests for estimates for jobs and of estimate sheets for the customer are studied. Such items as paper costs, typesetting costs, press costs, and bindery costs are part of the course. The use of Franklin Catalogs for pricing letterpress and lithography work is taught.

<b>6320 Life Drawing I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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The undraped figure, its uses in the layout form and the finished art version are studied. The course will deal with the natural movements and positions of the figure and the line figure versus the shaped figure.

<b>6321 Life Drawing II</b>	<b>1</b>	<b>4</b>	<b>3</b>
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This course is a study of the draped figure as compared to the undraped figure. The action of the figure upon clothing and the use of figure sketching to finished sketch and illustration is covered.

	Cls Hrs	Lab Hrs	Cr
<b>6322 Introduction to Illustration I</b>	<b>1</b>	<b>4</b>	<b>3</b>
This is an introductory course in media-watercolor, tempera, polymer and inks.			
<b>6323 Illustration II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Concentration will be in the painting media with exploration of various techniques with the brush. The value and advantage in using each technique and medium will be studied.			
<b>6325 Typography</b>	<b>1</b>	<b>4</b>	<b>3</b>
Type, what it is, sizes, different methods, spacing, line count, are taught and lab experiences in lettering type faces for layout are provided.			
<b>6326 Illustration III</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
The student receives concentrated work in black-and-white illustration with techniques in pen-and-ink, dry brush, chalks, designers colors, and pencil with the use of mechanical materials. Some work in line-converted photos and their use and the use of overlays in using a second or more colors to black and white ad-work is included.			
<b>6327 Illustration IV</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course covers techniques and handling of airbrush rendering and photo retouch. Students will have experiences in both black-and-white and color. Extensive use of masking techniques and supplementary brush work and use of combined media is included.			
<b>6328 Illustration V</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course is directed toward student interests in specific media. It affords an opportunity to develop proficiency in one or possibly two areas.			
<b>6331 Keylining I</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course covers analysis of requirements and practical lab work in the preparation of mechanical art for camera copy. A specific effort will be made to familiarize the student with typography and the			
<b>6332 Television and Audio-Visual Aids Design I</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
A study of techniques and art forms used by the television industry. The student will not only produce art but will execute projects in finished forms as films and TV tapes.			

	Cls Hrs	Lab Hrs	Cr
<b>6333 Television and Audio-Visual Aids Design II</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
Production of art used as visual-aid material in flat form, slides, films and TV tapes.			
<b>6334 Keylining II</b>	<b>1</b>	<b>4</b>	<b>3</b>
This advanced course in keylining concentrates on the practical preparation of keylines in relation to the printer. Classroom discussion will deal with practical considerations for keylining. The responsibilities of the artists and the printer are defined. Laboratory work will be concerned with producing accurate keylines ready for camera.			
<b>6335 Trouble Shooting Techniques for Graphic Arts</b>	<b>2</b>	<b>2</b>	<b>3</b>
Press operators become familiar with manufacturers' instruction manuals. Emphasis is placed on pinpointing problems and searching for solutions in a systematic process. Problems and possible causes and effects are studied.			
<b>6336 Composition and Design I</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
The student studies the basic elements of two-dimensional design and the use of these basic elements in creative work as related to the field of interior design.			
<b>6337 Composition and Design II</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
Three-dimensional concepts, color optics, color dynamics, the illusion of 3D and the actuality of the 3D form and the use, limitations, and physical manufacture of 3D forms are studied.			
<b>6338 Multicolor Plate Making</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course is designed to acquaint the student with effective use of color separations, covering also the use of the process camera for line and half-tone work for lithography, the basics of photo-engraving, offset plate making and stripping.			
<b>6341 Basic Drawing I</b>	<b>1</b>	<b>4</b>	<b>3</b>
The student will develop basic drawing skills with the pencil and charcoal and will deal with the quality of line, the mass of volume and the control of values.			
<b>6342 Basic Drawing II</b>	<b>1</b>	<b>4</b>	<b>3</b>
A continuation of Basic Drawing I (6341) with experience in the use of felt pens, chalks, conte crayon, pen and ink with the emphasis on the quality of descriptive sketching. The course will show the difference between the sketch used as finished art and the sketch used as a layout for the illustration.			

	Cls Hrs	Lab Hrs	Cr
<b>6343 Layout Design I</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course deals with the basic concepts of layouts, how they relate to finished art and the use of various media and techniques of layout.			
<b>6344 Layout Design II</b>	<b>1</b>	<b>5</b>	<b>3.5</b>
The emphasis will be upon the comprehensive layout and its relation to the finished printed brochure. All the efforts will be directed toward developing the student capacity for neat, well-designed layouts.			
<b>6347 Photography I</b>	<b>1</b>	<b>4</b>	<b>3</b>
This basic preparatory course in photographic fundamentals covers the theory and practical applications of basic camera types. Picture taking, exposure determination, processing, and introduction to the media of the field are introduced.			
<b>6348 Photography II</b>	<b>1</b>	<b>4</b>	<b>3</b>
Advanced photo procedures.			
<b>6349 Photography III</b>	<b>1</b>	<b>4</b>	<b>3</b>
Photo procedures and their relations to the reproductive processes.			
<b>6354 Camera and Darkroom Line Negatives</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course provides instruction in the operation of process cameras. Line photography techniques are emphasized. Film developing and darkroom techniques and procedures are practiced.			
<b>6355 Camera and Darkroom Halftones</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course requires experience in line negative work. Students learn methods and techniques of shooting copy which contain a graduation of tone, understanding densitometry types of screens and films in producing halftone negatives.			
<b>6356 Typesetting and Composition</b>	<b>1</b>	<b>4</b>	<b>3</b>
This lab course includes experience, instruction and practice for reproduction with vari-typer, headliner, hand-set type, transfer lettering, and phototype.			
<b>6357 Stripping, Black and White</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course covers laying-out and stripping the flat for black-and-white reproduction. Instruction and experience are provided in using equipment and supplies in stripping in negatives. Accuracy and placement of negatives in goldenrod sheets are stressed. Finished products are used in completion of letterpress and off-set plate making.			



	Cls Hrs	Lab Hrs	Cr
<b>6358 Stripping, Two and Three Color</b>	<b>1</b>	<b>4</b>	<b>3</b>

This course prepares the student to register jobs, make combinations, double or triple-burn a plate, to use colors to create effects and the use of special effects screens in ruby lith film. Prerequisite: 6357.

<b>6359 Plate Making</b>	<b>1</b>	<b>4</b>	<b>3</b>
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A working knowledge is developed in the preparation of surface plates. The student will study the conventional deep etch plate and multimetall plates. Material and equipment are demonstrated and used.

<b>6360 Bindery Basics I</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This course is concerned with the handling of the finished printed product. Operations covered are inspection, collating, inserting, trimming, padding, stitching, folding and punching. Instruction is also given in the operation of equipment involved.

<b>6361 Bindery</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This course provides further experience in the areas of book edge treatment, cornering, embossing, fastening methods, gold stamping, perforating, ruling, stitching, tipping, and the use of a three-sided knife. Prerequisite: 6360.

<b>6362 Duplicating Techniques</b>	<b>1</b>	<b>8</b>	<b>5</b>
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This course covers production tasks in the graphic arts area. Practices and procedures used in prospective employment situations are emphasized. Working experience is provided on small press duplicator machines, multi-color plate making and step and repeat techniques. Each student selects a job that can be stripped-up to expose one image a number of times on the same plate without duplicating negatives for each unit area. Color plates are made by using register marks and screens to line-up and burn plates.

<b>6363 Offset-Letter Presses</b>	<b>2</b>	<b>6</b>	<b>5</b>
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The student is acquainted with large press features and activities peculiar to their size and detailed operations on the letter press are practiced. Prerequisite: 6362.

<b>6364 Production Letter Press</b>	<b>2</b>	<b>6</b>	<b>5</b>
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The student learns to produce printing from raised surfaces in quantities. The activities will be long runs and production of quality items. Activities included are die cutting, embossing, numbering, thermography, and flexography. Prerequisite: 6363.

	Cls Hrs	Lab Hrs	Cr
<b>6365 Production Offset Presses</b>	<b>2</b>	<b>6</b>	<b>5</b>
This course is similar to Production Letter Press, differing only in the methods of producing materials. Activities peculiar to this method are the types of plates used and simultaneous application of multiple image in work-and-turn and similar printing techniques.			
<b>6366 Make-ready and Proofing</b>	<b>2</b>	<b>4</b>	<b>4</b>
In this area, the student will make-ready the press and also learn proofing techniques in making plates. The student experience activities are much like those of a pressman who ready-presses for operation, to include attaching the plate to the press, adjusting ink, water, paper feed, and other mechanisms and making trial impressions. Jobs are hand fed and proofed for errors on reproduced type proof presses. He finalizes jobs for the camera.			
<b>6367 Media and Occupational Illustrations</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course is designed to offer concentrated work in research in specific illustrative media as it relates to specific fields such as medical illustrations, technical and exploded illustrations, fashion illustrations, color retouching and rendering.			
<b>6368 Sequential Visual Aids and TV Art</b>	<b>1</b>	<b>4</b>	<b>3</b>
This is a course of independent work in the production of art used in sequential (story telling) form, for use as visual aids or TV art. Media studied are overhead projection transparencies, 35mm colored slides, flat art for TV, and flip charts in cinematography.			
<b>6369 Specialized Layout and Keyline</b>	<b>1</b>	<b>4</b>	<b>3</b>
This includes specialized projects in constructural design and execution of work designed for product catalogs, house organs, annual reports, and package design. Students will develop all creative and research material in a finished keyline.			
<b>6374 Color Theory</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course includes an intensive exploration of color — theory, expression, range, key and psychology — as related to the individual and family with respect to living with color. Practical application of problems in the use of color is covered.			
<b>6401 Blueprint Reading I</b>	<b>1</b>	<b>2</b>	<b>2</b>
Instruction and practice in the study of working drawings and application of understandings from the "print" to the "work." Students will			

concentrate on the kinds of working plans analogous to the occupational interest area. Typical units will include the relationship of views and details, interpretation of dimensions, transposing scale, tolerances, electrical symbols, schematic diagrams, welding symbols, sections, material symbols, material lists, architectural plates, room schedules, and plot plans.

<b>6404 Electronic Drafting Fundamentals</b>	<b>1</b>	<b>4</b>	<b>3</b>
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An introduction to the basic principles of drafting and their application in relation to electronic drawings. Drawing and reading of schematics is stressed. The skills of circuit layout from schematics and making schematics from circuit layouts is developed. Printed circuit board design techniques are taught.

<b>6405 Technical Drawing I</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers the uses of drafting equipment, free hand lettering, shape description and free hand sketching. The importance of complete and accurate drawings is stressed.

<b>6406 Technical Drawing II</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers problems and projects involving multi-view and pictorial drawings. A portion of the course includes descriptive geometry.

<b>6407 Technical Drawing III</b>	<b>2</b>	<b>6</b>	<b>5</b>
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Detail and assembly drawings, stock lists, springs, weldments and catalog items are studied.

<b>6408 Technical Drawing IV</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers basic jigs and fixtures, bearings, gears and cams and methods of precision measurements.

<b>6409 Technical Drawing V</b>	<b>2</b>	<b>6</b>	<b>5</b>
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The design of cutting tools, electrical and piping diagrams, special machines and the finished product are covered.

<b>6410 Technical Drawing VI</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers the planning and designing of dies, including piercing and forming, die cast and plastic mold dies.

<b>6413 Blueprint Fundamentals I</b>	<b>1</b>	<b>2</b>	<b>2</b>
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A lecture-laboratory course which includes blueprint reading and drafting theory and practices.

	Cls Hrs	Lab Hrs	Cr
<b>6414 Drafting and Manufacturing Standards</b>	<b>1</b>	<b>4</b>	<b>3</b>

This course includes drafting theory and practice with special consideration given to the standard practices of dimensioning, tolerancing, and notations of tooling components such as proper practices of revolving out of position, line elimination, sectioning and other related areas as they apply to drawings of castings, forgings and machine stock.

<b>6415 Electrical Blueprints</b>	<b>2</b>	<b>4</b>	<b>4</b>
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Industrial and commercial electrical symbols are studied and typical drawings are interpreted. Architectural electrical symbols, J.E.C. Standards symbols, E.I.A. symbols, one-line drawings, and N.E.M.A. motor and enclosure symbols are studied. (J.I.C. - Joint Industrial Council; E.I.A. - Electronics Industry Association; N.E.M.A. - National Electrical Manufacturers Association)

<b>6416 Blueprint Reading, Construction</b>	<b>1</b>	<b>4</b>	<b>3</b>
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A specialized course for heating, air conditioning, and refrigeration students. Emphasis will be placed on reading blueprints common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans as well as developing floor plans and "shop" sketches. The student will also make tracings of floor plans and layout of air conditioning systems.

<b>6417 Blueprint Fundamentals II</b>	<b>1</b>	<b>2</b>	<b>2</b>
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This course covers principles of drafting as applies to two-view and three-view drawings and projection and dimensioning of cylindrical and complex shapes.

<b>6418 Structural Drafting</b>	<b>1</b>	<b>4</b>	<b>3</b>
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Methods of detailing structural steel members and concrete and wood structures.

<b>6420 Architectural Drawing I</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers the uses of drafting equipment, free hand lettering, shape description and free hand sketching. The importance of complete and accurate drawings is stressed.

<b>6421 Architectural Drawing II</b>	<b>2</b>	<b>6</b>	<b>5</b>
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Problems and projects involving multi-view and pictorial drawings are covered. A portion of the course includes descriptive geometry.

<b>6422 Architectural Drawing III</b>	<b>2</b>	<b>6</b>	<b>5</b>
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This course covers the planning and design of a residence including size, space relationships and costs. A complete set of working drawings shall be the objective.

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>6423 Architectural Drawing IV</b>	<b>2</b>	<b>6</b>	<b>5</b>
This course covers the planning and design of a motel including size, space relationships and costs. A complete set of working drawings shall be the objective.			
<b>6424 Architectural Drawing V</b>	<b>2</b>	<b>6</b>	<b>5</b>
This course covers the planning and design of a school including size, space relationships and costs. A complete set of working drawings shall be the objective.			
<b>6425 Architectural Drafting</b>	<b>2</b>	<b>6</b>	<b>5</b>
In order to provide an atmosphere of "the world of work," teams of students complete a set of working drawings. A job captain is chosen from among the most deserving students. This design includes commercial, light industry, or office building design as approved by the instructor.			
<b>6426 Blueprint Reading II</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course is designed to develop proficiencies in the interpretation of more complex blueprints including notations, conventional symbols and dimensions. Prerequisite: 6401.			
<b>6428 Mechanical &amp; Electrical Equipment</b>	<b>3</b>	<b>0</b>	<b>3</b>
Students study the mechanical and electrical systems in a structure. Plumbing, heating and cooling and electrical systems will be studied. Mechanical and electrical drawings will be studied.			
<b>6430 Building Materials</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course covers the basic architectural and structural construction materials and their applications. Building materials will be considered for usability and cost feasibility.			
<b>6432 Architectural Rendering</b>	<b>1</b>	<b>2</b>	<b>2</b>
Architectural rendering covers introduction, history and review of pictorial types of drawing, study of light and color, rendering media, and application of different techniques and media by practical exercises.			
<b>6434 Architectural Estimating</b>	<b>1</b>	<b>2</b>	<b>2</b>
The student is introduced to basic estimating procedures as they apply to the architectural construction industry and methods of construction.			

	Cls Hrs	Lab Hrs	Cr
<b>6435 Manufacturing, Planning and Estimating</b>	<b>1</b>	<b>2</b>	<b>2</b>
The student studies manufacturing processing, planning and analysis, and cost estimating.			
<b>6436 Structural Design</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course covers statics and strength of materials. Vectors, stress, strain and the elasticity of materials will be considered in the basic structural design problems.			
<b>6437 Contracts and Specifications</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course covers contracts and specifications as they relate to plans, building codes and actual construction. Basic relationships between specifications and working drawings will be considered from a legal and working standpoint.			
<b>6443 Surveying and Measurements</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course covers the proper use and care of basic surveying equipment, including the level and transit. Field problems will be recorded in field notebooks and translated into records and drawings.			
<b>6462 Statics and Strength of Materials</b>	<b>5</b>	<b>0</b>	<b>5</b>
This course covers the basic laws of statics as applied to the systems of coplanar force systems and friction. Centroids and center of gravity of solids are discussed in relation to force systems. Strength of materials covers the properties of materials and the simple stresses and strains to which these materials are subjected.			
<b>6464 Mechanisms</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course covers the use of cams, gears, bearings, pawl and ratchets, linkages, and drive trains producing rotary, reciprocating or oscillating motion. Space requirements and velocity factors are included.			
<b>6479 Hydraulics and Pneumatics</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course covers fundamentals of fluid power including principles, functions, terminology and symbols of hydraulics and pneumatics.			
<b>6481 Manufacturing Processes</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course covers basic materials and the machines which perform the following processes: rolling, forming, casting, molding, machining, welding, heat treating, plating, and tape controlled machines.			
<b>6496 Basic Machining</b>	<b>1</b>	<b>4</b>	<b>3</b>
Students learn the operations of lathes, boring mills, drill presses, milling machines, shapers, planers, broaches and grinders. Their			

	Cls Hrs	Lab Hrs	Cr
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performance in the proper operational sequences, including the required tooling, is studied.

<b>6497 Design Problems</b>	<b>1</b>	<b>4</b>	<b>3</b>
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Typical job situations including group participation are covered. This may include the redesign of existing products or the design of existing products or the design of new products or concepts.

<b>6498 Numerical Control</b>	<b>2</b>	<b>2</b>	<b>3</b>
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An overview of numerical control to include terminology, applications, principles of operation, information of low designs and other basic related content are covered.

<b>6499 Quality Control</b>	<b>5</b>	<b>0</b>	<b>5</b>
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This course covers the principles and techniques of quality control. Other topics covered include vender-customer relationships, sampling inspections, process control and tests for significance.

<b>6502 Electricity</b>	<b>2</b>	<b>4</b>	<b>4</b>
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This course is a study of the basic concepts required of the electrical worker. Particular emphasis is placed on the concept of series circuits parallel circuits, series parallel combination circuits and Ohm's Law. The basic definitions of electromotive force, current and resistance receive special attention.

<b>6503 AC and DC Machines and Controls</b>	<b>3</b>	<b>6</b>	<b>6</b>
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Characteristics of generators and motors are introduced. Motors and control methods are studied and compared with emphasis on full and reduced-voltage magnetic controls.

<b>6504 Electrical Maintenance</b>	<b>3</b>	<b>4</b>	<b>5</b>
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Preventive electrical maintenance programs are developed for typical industrial and commercial situations. Related meters and test equipment are studied both for preventive and trouble shooting applications. Protection of life, property, and production are emphasized as primary goals.

<b>6505 AC/DC Fundamentals</b>	<b>3</b>	<b>6</b>	<b>6</b>
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Alternating and direct current theory and practice are covered. Ohm's Law, meters, batteries, generators, power systems, and transformers are stressed.

<b>6510 AC and DC Machines and Controls II</b>	<b>3</b>	<b>6</b>	<b>6</b>
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Specific applications of motors and generators are studied. Multi-

speed variable speed, synchronous, and wound rotor are among the types of motors studied. Electrical and mechanical braking and clutches are covered. Solid state motor control is introduced.

**6514 Vacuum Tube and Semi-conductor Fundamentals 3 6 6**

Basic lab techniques and the use of test equipment, including rectification and detection, diodes, audio amplification, oscillation, vacuum tube and semi-conductor characteristics and curves and tuned circuits are covered.

**6516 Industrial Electronics I 4 4 6**

An in depth study of AC/DC generators and motors, both DC 1 and 3. This is done so students may have an understanding of how a motor's associated controls affect the motor. Magnetic motor controls will be introduced.

**6517 Industrial Electronics II 4 4 6**

A continuation of Industrial Electronics I (6516) and the introduction of control systems with emphasis on remote magnetic and electronic controllers. Rotary control systems will also be included.  
Prerequisite: 6516.

**6518 Industrial Electronics III 4 4 6**

A continuation of Industrial Electronics II (6517) with an in-depth study of electronic controls. Main emphasis will be in the area of solid state control. Prerequisite: 6517.

**6523 Digital Principles and Applications I 3 4 5**

This course provides the student with a basic understanding of digital circuits and systems. Topics covered include logic circuits, binary numbers, octal numbers, binary codes, and Boolean algebra.

**6524 Digital Principles and Applications II 3 4 5**

Emphasis is placed on basic electronic counters, digital clocks, storage circuits, D/A and A/D conversion, and special counters and registers.  
Prerequisite: 6523.

**6525 Integrated Basic Circuits 3 4 5**

This course provides the student with a review of basic semi-conductor principles, and an introduction to the various classifications and categorizations of integrated circuits. Additionally, methods and techniques of integrated circuits packaging, and representative application and operation of integrated circuits will be covered.



	Cls Hrs	Lab Hrs	Cr
<b>6528 Semiconductor Devices</b>	<b>3</b>	<b>4</b>	<b>5</b>

An introduction to the theory and operation of semiconductor devices other than the bipolar transistor. Topics to be covered include Zener and tunnel diodes, photo electric devices, PNP transistors, junction transistors, FET's and other special semiconductor devices.

<b>6530 Radio and TV I</b>	<b>3</b>	<b>3</b>	<b>6</b>
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A study of basic AM radio theory provides the basis for understanding the audio section of the television receiver. Methods necessary for the solution of receiver problems that arise in occupational areas are studied, along with the use of appropriate test equipment.

<b>6531 Radio and TV II</b>	<b>3</b>	<b>3</b>	<b>6</b>
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A study of FM theory, completes the basis for the understanding of the audio portion of television receivers. Methods that are necessary for the solution of the receiver problems that arise in occupational areas are studied along with the use of test equipment.

Prerequisite: 6530.

<b>6532 Radio and TV III</b>	<b>3</b>	<b>3</b>	<b>6</b>
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This course is concerned with the study of the actual operation of a television receiver. The black-and-white receiver is studied from a circuitry viewpoint. Basic troubleshooting theory is used to solve receiver problems. Prerequisite: 6531.

<b>6533 Radio and TV IV</b>	<b>3</b>	<b>3</b>	<b>6</b>
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An in-depth study of the actual operation of color television receivers. Circuit functions and block diagrams are used to attain a functional knowledge of the color set. Troubleshooting theory is used to solve receiver problems. Prerequisite: 6532.

<b>6535 Recording Systems</b>	<b>3</b>	<b>6</b>	<b>6</b>
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Operational principles of both audio and video tape recording systems will be covered. Maintenance, alignment and operation will be stressed. Mechanical trouble shooting will be introduced.

<b>6538 Professional Standards</b>	<b>6</b>	<b>0</b>	<b>6</b>
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The course is an in-depth study of those elements a technician should know to become a certified technician.

<b>6540 Trouble Shooting Techniques I</b>	<b>1</b>	<b>4</b>	<b>3</b>
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The techniques of logical trouble shooting of electronic circuits and simple systems will be studied. Emphasis will be placed on signal tracing and signal injection methods.

	Cls Hrs	Lab Hrs	Cr
<b>6541 Trouble Shooting Techniques II</b>	<b>1</b>	<b>4</b>	<b>3</b>
A continuation of Trouble Shooting Techniques I (6540). This course will emphasize logic applied to signal injection and signal tracing in more complex electronic systems. Emphasis will be placed on the location of malfunctions.			
<b>6542</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course is designed to introduce the student to the use of common hand tools, test equipment and other general instruments used in the installation and construction of electronic equipment. Emphasis will be placed on reliable electrical connection techniques, wiring, lacing, and chassis layout and construction.			
<b>6545 Electrical Shop Processes</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course introduces the student to the types of raceways, connectors, insulators, and tools common to electricians' work. Use of drills, conduit punches, hole saws, conduit bending equipment, splicing, soldering and solderless connection techniques are stressed.			
<b>6542 Electronic Shop Processes I</b>	<b>4</b>	<b>4</b>	<b>6</b>
Applications of resistive circuits; series, parallel, series-parallel. Thevenin's and Norton's theorems, magnetism, D-C motors and generators, and basic principles of alternating current are included.			
<b>6553 Electronics Circuits II</b>	<b>4</b>	<b>4</b>	<b>6</b>
Topics to be covered include inductive and capacitive reactance, impedance, AC circuits, LCR series and parallel resonance, filters, transformers, AC motors and generators.			
<b>6554 Electronics Circuits III</b>	<b>4</b>	<b>4</b>	<b>6</b>
Transistor and vacuum tube fundamentals are introduced. The basic principles of oscillators, amplifiers, power supplies, audio circuits, and RF circuits are covered.			
<b>6555 Electronics Circuits IV</b>	<b>4</b>	<b>4</b>	<b>6</b>
Basic relationships involving pulse circuits; amplitude and frequency modulation, transmitters and receivers.			
<b>6556 Electronics V</b>	<b>4</b>	<b>4</b>	<b>6</b>
Total systems considerations of communications equipment including radio, television, microwave, transmission lines and antennas.			
<b>6557 Electronics VI</b>	<b>4</b>	<b>4</b>	<b>6</b>
Total systems considerations of analog and digital computers, and industrial control circuits.			

	Cls Hrs	Lab Hrs	Cr
<b>6581 Industrial and Commercial Wiring</b>	<b>3</b>	<b>4</b>	<b>5</b>
Wiring methods and materials are introduced in conformance with with the National Electrical Code. Lighting, heating, and motor wiring are studied and the related calculations applied to specific installations.			
<b>6585 Industrial Control Circuits</b>	<b>3</b>	<b>6</b>	<b>6</b>
Electronic devices are introduced with emphasis on practical control applications rather than engineering parameters. Thyratrons, SCR, regulator tubes, Zener diodes, thermistors, and photo-effect devices are typical of those used. Ability to follow the related schematic drawings is stressed. "Packaged" electronic control systems are discussed.			
<b>6604 Automotive Frame and Chassis Units</b>	<b>2</b>	<b>8</b>	<b>6</b>
A basic study of the automobile including economic and social impact, frame designs, wheel balance and alignment, steering geometry and brake, steering and suspension systems.			
<b>6605 Automotive Diagnosis and Tune-Up</b>	<b>2</b>	<b>8</b>	<b>6</b>
The operational principles of the automotive engine and the components that support good performance are studied. The laboratory is used for diagnosis and evaluation. Carburetion principles and the repair of various types of carburetors are covered as part of this course.			
<b>6607 Automotive Engines</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course is designed to familiarize students with tools, machines, and equipment needed for the rebuilding of the automotive internal combustion engine. Theory, construction, design, diagnosis, disassembly, repairing, testing, and reassembly are stressed throughout the course. Emphasis is placed on work skills and proficiency throughout the laboratory practices.			
<b>6608 Internal Combustion Engines</b>	<b>1</b>	<b>4</b>	<b>3</b>
A course in basic components of an engine. Emphasis is placed on how each component relates to the engine as a whole.			
<b>6610 Automotive Air Conditioning</b>	<b>2</b>	<b>2</b>	<b>3</b>
The student studies the theory, operation and maintenance of air conditioning as it is applied to automotive vehicles.			

	<b>Cls Hrs</b>	<b>Lab Hrs</b>	<b>Cr</b>
<b>6613 Automotive Power Trains</b>	<b>2</b>	<b>4</b>	<b>4</b>

The theory, operation, repair and trouble shooting of the power train of vehicles as it leaves the engine and is delivered at the wheels is studied. Components covered are clutches, transmissions, drive lines, differentials, axles and wheels.

<b>6614 Basic Auto Body Repair</b>	<b>2</b>	<b>8</b>	<b>6</b>
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An introduction to automotive body repair and refinishing. The construction of the auto body, minor dent damage repair and refinishing, hand and portable power tools and safety are emphasized.

<b>6616 Automotive Body Welding</b>	<b>1</b>	<b>8</b>	<b>5</b>
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The application of basic welding techniques in the replacement and repair of panels is covered. Techniques peculiar to automotive body repair are also covered.

<b>6618 Automotive Paint Shop Practices</b>	<b>1</b>	<b>4</b>	<b>3</b>
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Speed and skill are developed in the automotive refinishing processes. Special techniques and problems encountered in automotive refinishing are emphasized.

<b>6619 Automatic Transmission Fundamentals</b>	<b>2</b>	<b>2</b>	<b>3</b>
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A lecture-laboratory course in automatic transmissions which includes construction, function, principles of operation of the various types of automatic transmissions and their component units. The laboratory exercises will be conducted on laboratory equipment and dead transmissions.

<b>6620 Advanced Automatic Transmissions</b>	<b>2</b>	<b>8</b>	<b>6</b>
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This course is designed to briefly review basic automatic transmission fundamentals and includes diagnosis correction and testing of mal-functions on dead and live transmissions and their components. Prerequisite: 6619.

<b>6621 Advanced Automotive Diagnosis and Tune-up</b>	<b>2</b>	<b>8</b>	<b>6</b>
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An advanced course to familiarize students with the importance and necessity of trouble shooting and pin-point diagnostic procedures. It is designed to pull together previously studied courses.

Prerequisites: 6605, 6607, 6622, 6623.

	Cls Hrs	Lab Hrs	Cr
<b>6622 Automotive Electrical Systems</b>	<b>2</b>	<b>8</b>	<b>6</b>
Instruction is offered in the construction, function and principles of operation of the electrical units of the automobile, including units such as batteries, starting motors, generators, alternators, charging systems, regulators, conventional and transistorized ignition systems, body electrical components and other electrical components. Emphasis is placed on developing a comprehensive understanding of all electrical components and systems with an introduction to diagnosis, correction and testing.			
<b>6623 Automotive Fuels and Fuel and Emissions System</b>	<b>2</b>	<b>8</b>	<b>6</b>
Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the fuel and emission systems of the automobile causing air pollutants. There is also troubleshooting of the fuel and emission systems, providing a full range of testing, adjusting, repairing, and replacing experiences.			
<b>6624 Automotive Body Shop Practices</b>	<b>2</b>	<b>8</b>	<b>6</b>
Speed and skill are developed in the repair of minor collision damage. Special techniques used in the body shop are emphasized.			
<b>6625 Automotive Accessories</b>	<b>1</b>	<b>2</b>	<b>2</b>
Basic study of the function, construction, principles of operation and troubleshooting techniques for the varied accessories of automotive vehicles, to include automotive air conditioners, headlight enclosures and windshield washers and wipers.			
<b>6635 Body and Chassis Alignment</b>	<b>1</b>	<b>4</b>	<b>3</b>
This course covers the alignment of body panels for proper fit. It also covers the measurement of chassis alignment in the areas of the front suspension, rear axle and frame and the correction of misalignments.			
<b>6636 Collision Damage Repair</b>	<b>2</b>	<b>8</b>	<b>6</b>
Repair of extensive automotive body damage is covered. The replacement of major body panels is also taught. An introduction to frame straightening is covered.			
<b>6655 Fundamentals of Diesel Engines</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course covers 2 and 4-cycle diesel engines to include construction, principles of operation, super and turbo chargers. Valves, sleeves, and gearings are covered in detail. Laboratory work will cover rebuilding a diesel engine.			

	Cls Hrs	Lab Hrs	Cr
<b>6656 Diesel Engine Accessories</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course covers diesel starting systems, generators and alternators, governors, cooling systems and fuel injectors. Laboratory work covers work on diesel engines as relates to the respective systems.			
<b>6657 Diesel Engine Troubleshooting</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course covers diagnosis and correction of malfunctions of domestic diesel engines in theory and practice on practice and live engines.			
<b>6663 Introduction to Parts Handling</b>	<b>2</b>	<b>0</b>	<b>2</b>
The basic fundamentals of parts handling will be covered. Emphasis is placed on use of parts catalogs and parts department procedures.			
<b>6716 Thermodynamics</b>	<b>3</b>	<b>0</b>	<b>3</b>
This course covers the study of the various phenomena of energy, especially those which explain how heat is converted into useful work or power, and how, by appropriate processes of heat transfer and transformation, refrigeration or a cooling effect may be obtained.			
<b>6810 Basic Machine Tool Processes</b>	<b>2</b>	<b>8</b>	<b>6</b>
Benchwork, sawing, filing, layout, drilling, reaming, and care and use of basic machines and measuring tools related to machine tool processes.			
<b>6811 Machine Tool Processes I</b>	<b>2</b>	<b>8</b>	<b>6</b>
Shaper and milling machine operation is introduced, including work-holding methods and devices, proper set-ups, cutting and precision measuring tools.			
<b>6812 Machine Tool Processes II</b>	<b>2</b>	<b>8</b>	<b>6</b>
Advanced tool room machine tool processes and an introduction to surface and cylindrical grinding.			
<b>6813 Machine Tool Processes III</b>	<b>2</b>	<b>8</b>	<b>6</b>
A continuation of grinding and advanced milling practices, including an introduction to assembly methods and practices.			
<b>6814 Machine Tool Processes IV</b>	<b>2</b>	<b>8</b>	<b>6</b>
Advanced machine tool processes in the varied areas, including special projects, machine tool maintenance and tool making.			
<b>6815 Machine Tool Processes V</b>	<b>2</b>	<b>8</b>	<b>6</b>
A further investigation and study of metal cutting and machine tool principles including differential indexing, gear cutting and helical and			

		Cls Hrs	Lab Hrs	Cr
cam milling. Tracer template design and metric transposition are studied.				
<b>6820</b>	<b>Precision Measurements, Layout and Inspection</b>	<b>1</b>	<b>2</b>	<b>2</b>
A study of methods and techniques of applying precision measurements to the varied machine tool processes, including applications to production and quality control. Covered also are tolerance, fits, allowances, interchangeability are considered in relation to inspection procedures along with gauge inspection where appropriate.				
<b>6852</b>	<b>Machine Repair I</b>	<b>2</b>	<b>4</b>	<b>4</b>
The student is instructed in the skills of machine tools commonly used to produce new and reconditioned parts for machines under repair. Proficiency is gained in the use of basic machine tools in repairing work and damaged components of machine tools in repair.				
<b>6853</b>	<b>Machine Repair II</b>	<b>2</b>	<b>4</b>	<b>4</b>
Advanced skills are developed in machine repair. Students work on assigned repair problems as a group with individuals assuming responsibility for a specific part of the job.				
<b>6860</b>	<b>Diagnosis and Repair I</b>	<b>2</b>	<b>4</b>	<b>4</b>
This is a practical application course in industrial wiring methods and design including circuit and conductor calculations, motor circuits and controls, transformer and entrance layouts, illumination design, heating and air-conditioning, machine tool hook-up and circuiting. The National Electrical Code is introduced as it applies to the field.				
<b>6861</b>	<b>Diagnosis and Repair II</b>	<b>2</b>	<b>4</b>	<b>4</b>
Projects and actual installation and troubleshooting of live work are used to strengthen the basic skills previously learned. Group activities emphasize the team approach to problem areas.				
<b>6866</b>	<b>Industrial Hydraulics and Pneumatics</b>	<b>2</b>	<b>4</b>	<b>4</b>
The fundamentals of fluid power and the components are covered as to principle, function, terminology, repair and use. Study of machine tool circuits is used to make application.				
<b>6900</b>	<b>Basic Welding</b>	<b>1</b>	<b>2</b>	<b>2</b>
This course is an introduction to the setup and use of gas welders for use in heating, cutting, tempering, welding, brazing and soldering and the arc welder for cutting and welding. Safety hazards and safe practices in gas and arc welding are covered.				

		Cls Hrs	Lab Hrs	Cr
<b>6901</b>	<b>Welding for Related Trades I</b>	<b>2</b>	<b>4</b>	<b>4</b>
This course is an introduction to the area of arc and oxyacetylene welding. The fundamental principles of joining ferrous metals are studied and demonstrated. Basic welding processes, equipment operation, and safety procedures are practiced in the laboratory work. Emphasis is given to welding procedures and practice in the major area of work such as machine shop, automotive, and sheet metal.				
<b>6905</b>	<b>Record Keeping and Business Economics</b>	<b>2</b>	<b>0</b>	<b>2</b>
This course teaches the reasons for and methods of basic record keeping in both the technical areas of well construction and pump installation and for the sound business practice of cost accounting. Basic economic theory behind the establishment of a reasonable profit-making business plan is taught with emphasis on the production of a highly valued product or service.				
<b>6906</b>	<b>Gas Welding</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course covers use of gas welding equipment as relates to heating, cutting, tempering, welding, brazing and soldering the various types of metals. Also covered are safety hazards and safe practices in gas welding.				
<b>6907</b>	<b>Arc Welding</b>	<b>2</b>	<b>8</b>	<b>6</b>
This course covers the welding of ferrous metals and alloys utilizing electric welding methods and techniques and the carbon arc torch. Safety hazards and safe practices in arc welding are covered.				
<b>6908</b>	<b>Advanced Welding</b>	<b>2</b>	<b>8</b>	<b>6</b>
Advanced gas, arc, mig and tig welding methods and techniques as relate to pipe and flat materials and other geometric forms of the various metals in the flat, vertical and overhead positions, to include hard surfacing are covered. Production welding is introduced. Safety hazards and safe positions are covered.				
<b>6909</b>	<b>Welding Troubleshooting</b>	<b>1</b>	<b>8</b>	<b>5</b>
Construction, operation, maintenance, and troubleshooting of welding equipment will be covered. Evaluation of welding procedures and analyzing of the problems, recommendations and testing for improved welds will be covered.				
<b>7000</b>	<b>Drilling Equipment: Operation and Maintenance</b>	<b>3</b>	<b>4</b>	<b>5</b>
This course offers both the classroom and the "hands on" approach in the prescribed methods of operation and maintenance for the funda-				



mental tools and equipment utilized in the construction and development of a ground water supply.

**7005 Hydrogeology for Well Drillers 4 0 4**

This will be a basic introduction to geology as it relates to underground water and its occurrence, characteristics, behavior and movement beneath the earth's surface. The hydrologic cycle will be analyzed, including the continuous movement of water from ocean to the sky through evaporation, back to the land surface as rain, into the underground and finally back to the ocean. This course presents an overall view of a complex technical subject in a simplified manner with concentration on the basic principles as they relate to water well construction.

**7010 Pump Theory and Maintenance (Water Well Systems) 3 2 4**

This course will deal with the functional theory and installation techniques necessary for the operation of domestic, industrial and municipal pumping systems. Basic physical principles behind various pumping methods will be studied along with the procedures which must be followed for determination of pump size and type for particular job requirements. A "hands on" approach will be followed in pump installation training wherein students will unpack, install, align, test, maintain and repair pumping equipment.

**7015 Water Conditioning Requirements and Systems 2 0 2**

The student will learn the need for and benefits of conditioned and treated water, both for human consumption and industrial applications. Various methods and types of equipment required to condition water will be studied and evaluated. The course will provide basic knowledge of water conditioning for domestic, commercial, industrial and municipal applications, covering such subjects as the elimination of bacteria and the reduction of iron, sulphur, phosphate, salinity and water hardness.

**7020 Well Construction, Development and Maintenance 4 0 4**

This course will deal with the basic methods of well construction including cable tool, rotary, reverse rotary, as well as jetting, boring and augering. The relationship between the various drilling methods and the subsurface geologic conditions encountered will be studied. Emphasis will be placed on development of wells for optimum water production and proper maintenance to insure continuity and longevity of the water supply.

<b>7025</b>	<b>Field Drilling, Site Selection, Setup and Operation</b>	<b>2</b>	<b>4</b>	<b>4</b>
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Students study the operation of all types of water well drilling equipment under field conditions. The total program will include drill site selection with emphasis on proper location in relationship to availability of water, operational safety, ease of machine setup as well as service of the completed well.

<b>7030</b>	<b>Sanitary Aspects of Water Well Technology</b>	<b>2</b>	<b>0</b>	<b>2</b>
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Construction techniques critical to the elimination of sources of potential pollution of the water entering the water bearing strata or the well itself will be taught. Such items as proper welding, coupling, seating, cementing, grouting, and capping of well casing will be discussed with emphasis on the prevention of polluted surface water from travelling down the outside of the casing and thence into the well. Emphasis will also be placed on sterilization of all drilling tools and initial chlorination of new wells in order to inhibit bacterial growth. Well construction codes established by state health departments will be described.

<b>7500</b>	<b>Problem Seminar</b>	<b>0</b>	<b>6</b>	<b>0</b>
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This is an open laboratory class in which the student pursues supervised study in his occupational field. Problems are assigned by the department chairman.

<b>8000</b>	<b>Introduction to Tools, Processes and Safety</b>	<b>1</b>	<b>2</b>	<b>2</b>
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This course covers a brief history of carpentry and present trends of the construction industry. Operation, care and use of carpenter's hand tools and power tools in cutting, shaping, and joining construction materials used by the carpenter is covered, and includes materials and construction.

<b>8001</b>	<b>Fundamentals of Carpentry: Foundation Layout and Construction</b>	<b>1</b>	<b>6</b>	<b>4</b>
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This course covers materials and methods of construction, building layout, preparation of building site, footings and foundation, wall construction, to include form construction and erection.

<b>8002</b>	<b>Fundamentals of Carpentry: Rough Framing</b>	<b>1</b>	<b>6</b>	<b>4</b>
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Instruction is given in the principles and practices of frame construction, including foundation sites, floor joists, studs, rafters, plates, bridging, bracing, sheathing, sub-flooring and interior wall partitions. Roof construction is covered, including layout and construction methods of common types of roofs using standard rafter construction, truss construction, and post and beam construction. Application and selection

of sheathing and roofing is included. Consideration is given to the coordination of carpentry work with installation of mechanical equipment such as: electrical, air conditioning, heating and plumbing. Prerequisite: 6401, 0314.

**8003      Fundamentals of Carpentry: Exterior Finish                      1      6      4**

This course covers exterior finish as relates to carpentry, including materials and methods used in finishing, carpentry, such as exterior cornice, sash door and window trim. Prerequisite: 8002.

**8004      Fundamentals of Carpentry: Interior Trim and Finish                      1      6      4**

This course covers interior trim, including door and window trim and facing, interior flooring, molding, cornice construction, installation of hardware, installation of built-in equipment and cabinets. Prerequisite: 8002.

**8005      Fundamentals of Plumbing    1      2      2**

This course is designed to introduce students to a brief history of plumbing, the tools, fittings and small equipment used by plumbers and the methods and techniques of properly mating plumbing materials including operations such as threading, cutting, caulking, and sweating the varied types of pipe and tubing used in plumbing. The installation of and maintenance of hot and cold water distribution systems, heating device systems, private and public sewage and drainage systems and ventilation for single and multilevel dwellings will be covered.

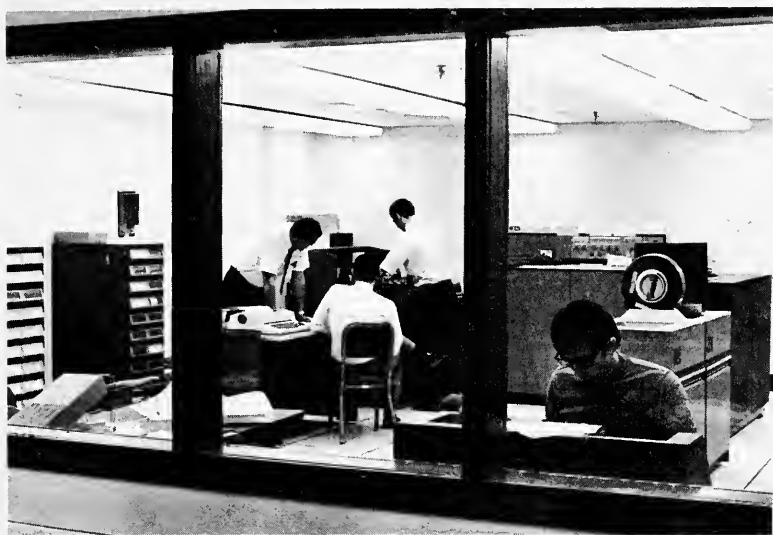
**8006      Fundamentals of Interior Electric Wiring    1      2      2**

This course covers basic electrical theory, electrical codes and symbols, installation of electrical service, metering equipment, lighting, switches, outlets, heating control systems, remote controls and other electrical components common to residential wiring, installation and maintenance. Prerequisite: 6401, 0314.

**8007      Fundamentals of Bricklaying    1      4      3**

This course is a study of basic tools and materials used in the masonry field, physical properties of brick, structural tile, concrete block. Solid brick walls, corners, isolated piers and pilasters will be constructed. Construction of masonry walls including corners for English, Flemish and Dutch bonds, laying brick to line on the job or job-like situations, including erection of chimneys, fireplaces and arches is covered. Also included is the setting of designs in wall and floor tile and trimmers and doing construction in ornamental brick work. Prerequisite: 6401, 6426, 0314.

		Cls Hrs	Lab Hrs	Cr
<b>8008</b>	<b>Fundamentals of Concrete Masonry</b>	<b>1</b>	<b>6</b>	<b>4</b>
This course covers the properties and characteristics of the varied types of concrete and methods of reinforcement. Concrete forms and their construction are covered, also design and construction of footings, utilization of water proofing.				
<b>8101</b>	<b>Interior Decorating I</b>	<b>1</b>	<b>2</b>	<b>2</b>
History of decoration, furniture, rendering furniture and making lay-outs, textile fabrics of historic periods, design, color harmony and its development, house planning and room arrangements; window draperies and curtains and picture hanging are covered.				
<b>8102</b>	<b>Interior Decorating II</b>	<b>1</b>	<b>2</b>	<b>2</b>
Color pigments and vehicles; blending, mixing and matching varnishes, stains, lacquers, and paints, and cleaning and painting of side walls and ceilings are covered.				
<b>8103</b>	<b>Interior Decorating III</b>	<b>1</b>	<b>2</b>	<b>2</b>
This covers theory and application of various types of wall decorations. Wall covering methods and techniques to include hanging various types of patterns. Prerequisite: 0314.				
<b>8104</b>	<b>Interior Decorating IV</b>	<b>1</b>	<b>2</b>	<b>2</b>
Floor coverings to include foundations and cushions, tile and linoleum laying, floor refinishing and carpeting are covered. Prerequisite: 0314.				
<b>8110</b>	<b>Estimating and Bookkeeping</b>	<b>1</b>	<b>6</b>	<b>4</b>
A study of building plans and specifications, how to make take-offs and compile quantity surveys, study of current pay wages in the building field. Also covered is the comparison of cost of building materials and labor involved in erecting such materials. Prerequisites: 8002, 8003, 8005, 8001, 6426, 6401, 8006.				
<b>8701</b>	<b>Basic Metallurgy</b>	<b>2</b>	<b>2</b>	<b>3</b>
The study of steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals, and non-destructive testing.				
<b>8702</b>	<b>Basic Heat Treatment</b>	<b>2</b>	<b>2</b>	<b>3</b>
The fundamentals of heat treatment and reactions that occur in metals subjected to various heat-treatment methods and techniques. Utilization of gas and electric furnaces and their controls are covered. Heat treatment principles as applied to ferrous and non-ferrous materials are covered.				



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## DIRECTOR EMERITUS

Huston C. Isaacs, Director Emeritus, Wabash Valley Technical Institute .....	1967—1970
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5221 Ivy Tech Dr., Indianapolis, IN 46268 : Telephone (317) 297-3210

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1-6.

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Indiana University, A.B.

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Franklin College, A.B.; Indiana University, M.S.

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Center: Centenary College (La.); Ball State University, M.L.S.

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Eastern Illinois University, B.S.; Indiana University, M.S.

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- Corinne W. Walker ..... Director, Related Studies and Pre-Technical  
Education: Indiana University, A.B., M.S.

## **NORTHWEST TECHNICAL INSTITUTE – REGION 1**

**1440 East 35th Ave., Gary, IN 46409 : Telephone (219) 887-9646**

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- Daniel Leman ..... Assistant Director for Community Services  
Ball State University, B.S.
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Jean Carmen Magidson, Instructor in Public Services Technology, Division of Business; Indiana University, B.S.

Ann L. Martin, Instructor in Public Services Technology, Division of Business; Indiana University, B.S.; Purdue University, M.S.

Virginia Melevage . . . . . Chairman, Health Occupations  
St. Mary College, B.S.; Univeristy of Chicago, M.A.

Mable Rhoades, R.N., Instructor in Health Occupations, Division of Life Sciences; Earlham College.

Everette Rohwedder, Vocational Instructor in Automotive Mechanics, Division of Agriculture and Industry; Purdue University.

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## **ST. JOSEPH VALLEY TECHNICAL INSTITUTE — REGION 2**

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## **NORTHEAST TECHNICAL INSTITUTE — REGION 3**

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Ball State University, B.S., M.A.

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and Industry, Indiana Institute of Technology, B.S.

Gary G. Olinger, Instructor in English, Division of General Studies,  
Indiana University, B.S.; St. Francis College, M.S.

Rose E. Otto, Instructor in Computer Technology, Division of Business  
Bowling Green University, B.S., M.A.

Michael D. Rose, Instructor in Automotive Technology, Division of  
Agriculture and Industry

Robert C. Ruhl, Professor of Engineering, Division of Agriculture and  
Industry, Purdue University, B.S., M.S.

Jeanine L. Stewart, Instructor in Accounting, Division of Business,  
Ball State University, B.S.

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Ball State University, B.S., M.A.

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Marilyn A. Caster, R.N., Vocational Instructor in Practical Nursing,  
Division of Life Sciences, Indiana Central College, B.S.

Madlon L. Drayer, R.N., Vocational Instructor in Operating Room  
Technology, Division of Life Sciences, St. Elizabeth Hospital  
School of Nursing; Purdue University

Beverly J. Hoskins, Vocational Instructor in Operating Room Tech-  
nology, Division of Life Sciences, Purdue University, A.D., B.S.

Helen R. Jacot, R.N., Vocational Instructor in Practical Nursing,  
Division of Life Sciences, Indiana University; Purdue University

- Deanna D. Klosinski, A.S.M.T., Instructor in Medical Laboratory Assistant Technology, Division of Life Sciences, Indiana State University, B.S.; Purdue University
- Ronald D. Koble, A.R.I.T., Vocational Instructor in Inhalation Therapy, Division of Life Sciences, Community Hospital School of Nursing
- Margaret E. Lambuth, R.N., Vocational Instructor in Medical Assistant Technology, Division of Life Sciences, St. Elizabeth Hospital School of Nursing; Purdue University
- Elizabeth J. Laws, R.N., Instructor in Practical Nursing, Division of Life Sciences, St. Francis College, B.S.; Purdue University
- Diane E. Liverance, R.N., Vocational Instructor in Practical Nursing, Division of Life Sciences, Bronson Methodist Hospital (Michigan); Purdue University
- Paul T. McKelvey, Instructor in Waste Water Treatment, Division of Life Sciences, Ball State University, B.S., M.S.; Purdue University
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- Doris M. Spencer, R.N., Instructor in Practical Nursing, Division of Life Sciences, Indiana University, B.S.
- Gloria C. Steel, Instructor in Accounting, Division of Business, Michigan State University, B.A., M.A.; Purdue University
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## **NORTH CENTRAL TECHNICAL INSTITUTE—REGION 5**

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Franklin E. Minion, Instructor in Manufacturing Engineering, Division of Agriculture and Industry, Eastern Michigan University, B.S.

Gregory Lynn Moss, Instructor in Electronics, Division of Agriculture and Industry, Purdue University, B.S.E.E.

Kenneth T. Orem, Instructor in Building Structural Technology, Division of Agriculture and Industry

Lloyd P. Scherich, Vocational Instructor in Automotive Mechanics, Division of Agriculture and Industry, Indiana University

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## **EAST CENTRAL TECHNICAL INSTITUTE — REGION 6**

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Richard L. All, Instructor in Graphic Arts, Division of Practical Arts,  
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Betty J. Beauchamp, R.N., Instructor in Practical Nursing, Division of  
Life Sciences, Union Hospital School of Nursing, Indiana State  
University B.S., M.S.

Sammy E. Borden, Instructor in Electronics, Division of Agriculture  
and Industry, Indiana State University, B.S., M.S.

Ray Boyer, Instructor, Division of General Studies, Indiana University,  
B.S.; Indiana State University, M.S.

Billy J. Brummett, Instructor in Automotive Mechanics, Division of  
Agriculture and Industry, Indiana State University, B.S., M.S.

Dorothy Catlin, R.N., Instructor in Practical Nursing, Division of Life  
Sciences, Union Hospital School of Nursing; Indiana State Univer-  
sity, B.S.

Wayne R. Clifton, Instructor in Automotive Body Repair, Division of  
Agriculture and Industry, Indiana State University, B.S., M.S.

J. Rex Coopridier, Instructor, Division of General Studies, Indiana State  
University, B.S., M.S.

John M. Danek, Instructor in Electronics, Division of Agriculture and  
Industry, Indiana State University, B.S.

Imogene Dunlap, R.N., Vocational Instructor in Practical Nursing,  
Division of Life Sciences, Union Hospital School of Nursing

Donald L. Giovanini, Vocational Instructor in Automotive Mechanics,  
Division of Agriculture and Industry

Irma I. Gulitz, R.N., Instructor in Practical Nursing, Division of Life  
Sciences, Union Hospital School of Nursing, Indiana State Univer-  
sity, B.S.

Ruth M. Hagmann, R.N., Instructor in Practical Nursing, Division of  
Life Sciences, Indiana University, B.A., Indiana State University M.S.

Nancy J. Hyre, Instructor in Practical Nursing, Division of Life Sciences,  
Duke University, B.S.; University of Maryland, MSW



Dorothy M. Kline, R.N., Vocational Instructor in Practical Nursing,  
Division of Life Sciences, Union Hospital School of Nursing

Susan Lapworth, Instructor in Mathematics, Division of Mathematics  
and Science, Indiana State University, A.B., M.A.

Margaret H. Meighen, Assistant Professor of Accounting, Division of  
Business, Indiana State University, B.S., M.S.

Dale E. Mowbray, Vocational Instructor in Electronics, Division of  
Agriculture and Industry

Joretta Roloff, Instructor in Practical Nursing, Division of Life Sciences,  
Indiana State University B.S.

Janice L. Sagraves, Instructor in Secretarial Science, Division of Busi-  
ness, Indiana State University, B.S.

Billy M. Woolf, Vocational Instructor in Electronics, Division of Agri-  
culture and Industry, Indiana State University, B.S.

Harold L. Wortman, Instructor in Welding, Division of Agriculture and  
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Jerry W. Yates, Instructor in Drafting, Division of Agriculture and  
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- Jimmie B. Beeler, Divisional Chairman and Associate Professor, Division of General Studies, Indiana University, A.B.; Butler University, M.S.
- Barbara E. Bruton, R.T., (ARRT), Vocational Instructor in Radiologic Technology, Division of Life Sciences, Texas Women's University; University of Houston
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- Monica L. Collins, Library Supervisor, University of Dayton, B.S.
- John L. Crose, Instructor in Health Occupations, Division of Life Sciences, Butler University, B.A.; Indiana Central College, M.A.
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- Jeanette E. Herr, R.T., (ARRT), Vocational Instructor in Radiologic Technology, Division of Life Sciences, Indiana University Medical Center X-Ray School
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- Sheila E. May, Instructor, Division of General Studies, Eastern Michigan University, A.B.

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- David E. Miller, Instructor in Mathematics, Division of Mathematics and Science, Purdue University, B.S.; Indiana State University, M.S.
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- Richard Purdy, Vocational Instructor, Special Apprenticeship Carpentry Program, Ball State University, B.S.
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- Ernest L. Rogers, M.T. (ASCP), Instructor in Medical Laboratory Assistant Technology, Division of Life Sciences, Hanover College, A.B.; Indiana Central College, M.A.
- Mary Lee Seibert, M.T. (ASCP), Divisional Chairman and Assistant Professor of Health Occupations, Division of Life Sciences, Indiana University, B.S.
- James M. Simone, Divisional Chairman and Vocational Instructor in Computer Technology, Division of Business
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### Instructional Staff

Marlene K. Blue, Instructor in Mathematics, Division of Mathematics  
and Science, Butler University, B.S.

Mary L. Busse, R.N., Instructor in Health Occupations, Division of Life  
Sciences, Ball State University, B.S.

Betty L. Drutt, R.N., Instructor in Health Occupations, Division of  
Life Sciences, Evansville University, B.S.

Beverly J. Fordham, Instructor in Secretarial Science, Division of Busi-  
ness, Brigham Young University, B.S.

Celinda K. Leach, Instructor in Health Occupations, Division of  
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Hari Mirchandani, Chairman and Instructor in Drafting and Manufac-  
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sity at Bombay, B.S., B.E.

Donald J. Phillips, Instructor in Commercial Arts, Division of Practical  
Arts, Indiana University, B.S.

Virginia J. Rouse, Instructor, Division of General Studies, Franklin  
College, A.B.

Phillip G. Shulze, Instructor in Electronics, Division of Agriculture and  
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Ramona Simmonds, Instructor in Health Occupations, Division of  
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Joyce Williams, R.N., Instructor in Health Occupations, Division of  
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Community College at Buffalo, B.S.
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Catherine, B.A.
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Industry, Southern Illinois University, B.S.; M.S.
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Maureen McCarter, Instructor in Interior Design, Division of Practical Arts, Indiana State University, B.S.

Maurice O. Pride, Instructor in Drafting, Division of Agriculture and Industry, Indiana State University; Purdue University

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Kenneth A. Staley . . . . . Administrative Assistant  
Ohio Saint Matthew University, B.A.

**Instructional Staff**

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# INDIANA VOCATIONAL TECHNICAL COLLEGE

## General Catalog 1972-73

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